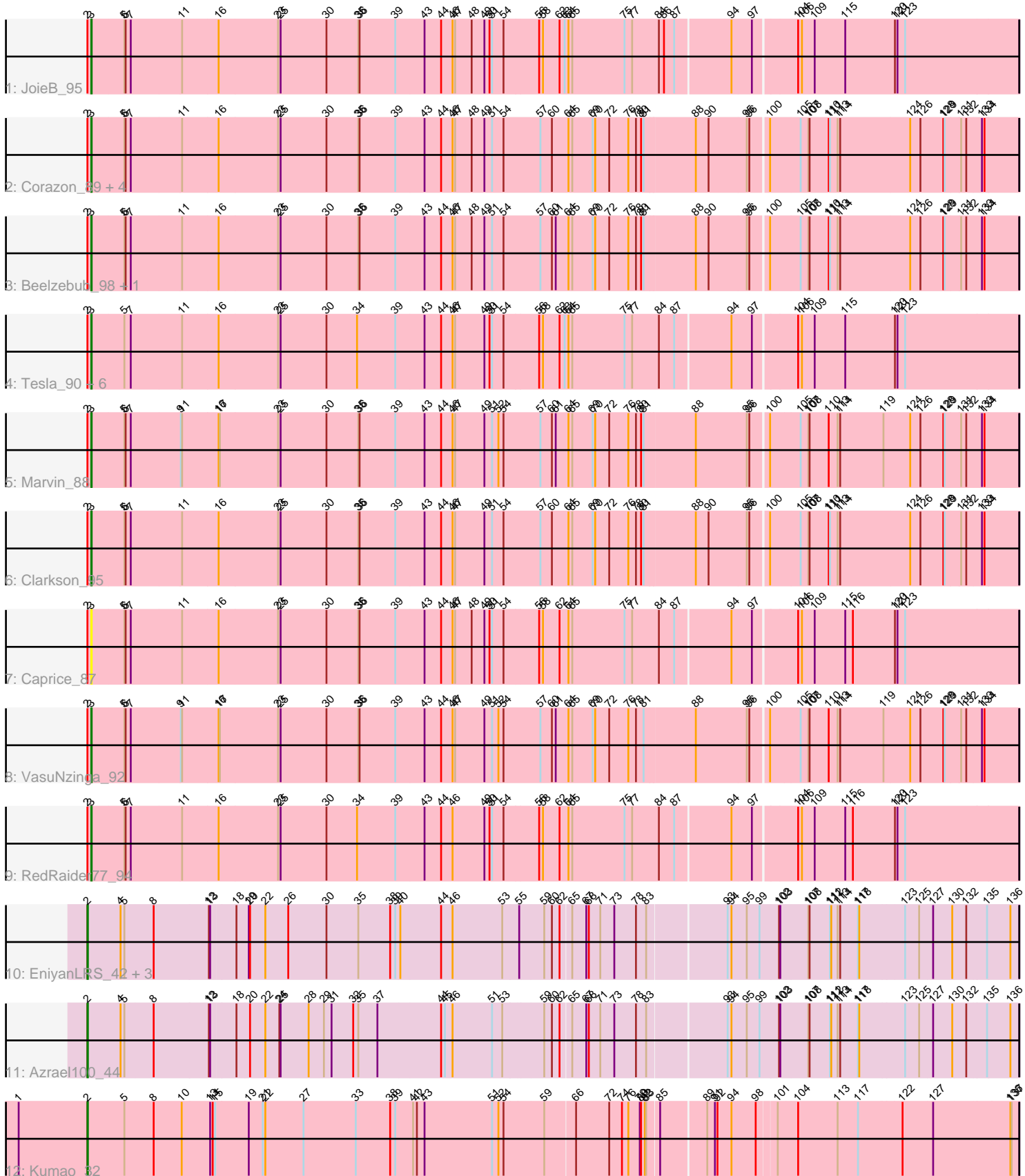


Pham 300309



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 300309 Report

This analysis was run 06/08/26 on database version 649.

Pham number 300309 has 26 members, 1 are drafts.

Phages represented in each track:

- Track 1 : JoieB_95
- Track 2 : Corazon_89, Huphlepuuff_96, LittleLaf_92, FeliMaine_94, Lilbit_90
- Track 3 : Beelzebub_98, Pringar_90
- Track 4 : Tesla_90, Gattaca_93, Poise_95, Raela_96, Blackbeetle_95, MosMoris_90, GoongGoong_95
- Track 5 : Marvin_88
- Track 6 : Clarkson_95
- Track 7 : Caprice_87
- Track 8 : VasuNzinga_92
- Track 9 : RedRaider77_94
- Track 10 : EniyanLRS_42, Wildcat_45, Cosmo_45, MaryV_45
- Track 11 : Azrael100_44
- Track 12 : Kumao_32

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

The start number called the most often in the published annotations is 3, it was called in 19 of the 25 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Beelzebub_98, Blackbeetle_95, Caprice_87, Clarkson_95, Corazon_89, FeliMaine_94, Gattaca_93, GoongGoong_95, Huphlepuuff_96, JoieB_95, Lilbit_90, LittleLaf_92, Marvin_88, MosMoris_90, Poise_95, Pringar_90, Raela_96, RedRaider77_94, Tesla_90, VasuNzinga_92,

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

-

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

- Azrael100_44, Cosmo_45, EniyanLRS_42, Kumao_32, MaryV_45, Wildcat_45,

Summary by start number:

Start 2:

- Found in 26 of 26 (100.0%) of genes in pham
- Manual Annotations of this start: 6 of 25
- Called 23.1% of time when present
- Phage (with cluster) where this start called: Azrael100_44 (V), Cosmo_45 (V), EniyanLRS_42 (V), Kumao_32 (singleton), MaryV_45 (V), Wildcat_45 (V),

Start 3:

- Found in 20 of 26 (76.9%) of genes in pham
- Manual Annotations of this start: 19 of 25
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beelzebub_98 (S), Blackbeetle_95 (S), Caprice_87 (S), Clarkson_95 (S), Corazon_89 (S), FeliMaine_94 (S), Gattaca_93 (S), GoongGoong_95 (S), Huphlepuuff_96 (S), JoieB_95 (S), Lilbit_90 (S), LittleLaf_92 (S), Marvin_88 (S), MosMoris_90 (S), Poise_95 (S), Pringar_90 (S), Raela_96 (S), RedRaider77_94 (S), Tesla_90 (S), VasuNzinga_92 (S),

Summary by clusters:

There are 3 clusters represented in this pham: S, singleton, V,

Info for manual annotations of cluster S:

- Start number 3 was manually annotated 19 times for cluster S.

Info for manual annotations of cluster V:

- Start number 2 was manually annotated 5 times for cluster V.

Gene Information:

Gene: Azrael100_44 Start: 32883, Stop: 35012, Start Num: 2

Candidate Starts for Azrael100_44:

(Start: 2 @32883 has 6 MA's), (4, 32961), (5, 32970), (8, 33036), (12, 33165), (13, 33168), (18, 33225), (20, 33255), (22, 33291), (24, 33324), (25, 33327), (28, 33393), (29, 33429), (31, 33447), (32, 33498), (35, 33510), (37, 33555), (44, 33699), (45, 33708), (46, 33726), (51, 33819), (53, 33843), (59, 33933), (60, 33951), (62, 33969), (65, 33993), (67, 34026), (68, 34032), (71, 34059), (73, 34092), (78, 34143), (83, 34167), (93, 34344), (94, 34353), (95, 34389), (99, 34419), (102, 34464), (103, 34467), (107, 34530), (108, 34533), (111, 34581), (112, 34584), (113, 34599), (114, 34605), (117, 34647), (118, 34650), (123, 34755), (125, 34788), (127, 34818), (130, 34863), (132, 34893), (135, 34938), (136, 34992),

Gene: Beelzebub_98 Start: 53499, Stop: 55637, Start Num: 3

Candidate Starts for Beelzebub_98:

(Start: 2 @53490 has 6 MA's), (Start: 3 @53499 has 19 MA's), (5, 53574), (6, 53577), (7, 53589), (11, 53706), (16, 53790), (23, 53928), (25, 53934), (30, 54042), (35, 54117), (36, 54120), (39, 54204), (43, 54270), (44, 54309), (46, 54336), (47, 54342), (48, 54381), (49, 54411), (51, 54429), (54, 54456), (57, 54543), (60, 54570), (61, 54579), (64, 54609), (65, 54618), (69, 54666), (70, 54672), (72, 54705), (76, 54750), (78, 54768), (80, 54780), (81, 54786), (88, 54903), (90, 54933), (95, 55020), (96, 55026), (100, 55065), (105, 55134), (107, 55152), (108, 55155), (110, 55200), (111, 55203), (113, 55221), (114, 55227), (124, 55389), (126, 55413), (128, 55467), (129, 55470), (131, 55506), (132, 55518), (133, 55551), (134, 55557),

Gene: Blackbeetle_95 Start: 52997, Stop: 55138, Start Num: 3

Candidate Starts for Blackbeetle_95:

(Start: 2 @52988 has 6 MA's), (Start: 3 @52997 has 19 MA's), (5, 53072), (7, 53087), (11, 53204), (16, 53288), (23, 53426), (25, 53432), (30, 53540), (34, 53612), (39, 53702), (43, 53768), (44, 53807), (46, 53834), (47, 53840), (49, 53909), (50, 53921), (51, 53927), (54, 53954), (56, 54035), (58, 54044), (62, 54083), (63, 54095), (64, 54104), (65, 54113), (75, 54236), (77, 54254), (84, 54317), (87, 54353), (94, 54479), (97, 54524), (104, 54620), (106, 54629), (109, 54659), (115, 54731), (120, 54848), (121, 54854), (123, 54872),

Gene: Caprice_87 Start: 52935, Stop: 55076, Start Num: 3

Candidate Starts for Caprice_87:

(Start: 2 @52926 has 6 MA's), (Start: 3 @52935 has 19 MA's), (5, 53010), (6, 53013), (7, 53025), (11, 53142), (16, 53226), (23, 53364), (25, 53370), (30, 53478), (35, 53553), (36, 53556), (39, 53640), (43, 53706), (44, 53745), (46, 53772), (47, 53778), (48, 53817), (49, 53847), (50, 53859), (51, 53865), (54, 53892), (56, 53973), (58, 53982), (62, 54021), (64, 54042), (65, 54051), (75, 54174), (77, 54192), (84, 54255), (87, 54291), (94, 54417), (97, 54462), (104, 54558), (106, 54567), (109, 54597), (115, 54669), (116, 54687), (120, 54786), (121, 54792), (123, 54810),

Gene: Clarkson_95 Start: 53179, Stop: 55317, Start Num: 3

Candidate Starts for Clarkson_95:

(Start: 2 @53170 has 6 MA's), (Start: 3 @53179 has 19 MA's), (5, 53254), (6, 53257), (7, 53269), (11, 53386), (16, 53470), (23, 53608), (25, 53614), (30, 53722), (35, 53797), (36, 53800), (39, 53884), (43, 53950), (44, 53989), (46, 54016), (47, 54022), (49, 54091), (51, 54109), (54, 54136), (57, 54223), (60, 54250), (64, 54289), (65, 54298), (69, 54346), (70, 54352), (72, 54385), (76, 54430), (78, 54448), (80, 54460), (81, 54466), (88, 54583), (90, 54613), (95, 54700), (96, 54706), (100, 54745), (105, 54814), (107, 54832), (108, 54835), (110, 54880), (111, 54883), (113, 54901), (114, 54907), (124, 55069), (126, 55093), (128, 55147), (129, 55150), (131, 55186), (132, 55198), (133, 55231), (134, 55237),

Gene: Corazon_89 Start: 53373, Stop: 55511, Start Num: 3

Candidate Starts for Corazon_89:

(Start: 2 @53364 has 6 MA's), (Start: 3 @53373 has 19 MA's), (5, 53448), (6, 53451), (7, 53463), (11, 53580), (16, 53664), (23, 53802), (25, 53808), (30, 53916), (35, 53991), (36, 53994), (39, 54078), (43, 54144), (44, 54183), (46, 54210), (47, 54216), (48, 54255), (49, 54285), (51, 54303), (54, 54330), (57, 54417), (60, 54444), (64, 54483), (65, 54492), (69, 54540), (70, 54546), (72, 54579), (76, 54624), (78, 54642), (80, 54654), (81, 54660), (88, 54777), (90, 54807), (95, 54894), (96, 54900), (100, 54939), (105, 55008), (107, 55026), (108, 55029), (110, 55074), (111, 55077), (113, 55095), (114, 55101), (124, 55263), (126, 55287), (128, 55341), (129, 55344), (131, 55380), (132, 55392), (133, 55425), (134, 55431),

Gene: Cosmo_45 Start: 32890, Stop: 35013, Start Num: 2

Candidate Starts for Cosmo_45:

(Start: 2 @32890 has 6 MA's), (4, 32968), (5, 32977), (8, 33043), (12, 33172), (13, 33175), (18, 33232), (19, 33259), (20, 33262), (22, 33298), (26, 33352), (30, 33442), (35, 33517), (38, 33592), (39, 33604), (40, 33613), (44, 33706), (46, 33733), (53, 33850), (55, 33886), (59, 33940), (60, 33958), (62, 33976), (65, 34000), (67, 34033), (68, 34039), (71, 34066), (73, 34099), (78, 34150), (83, 34174), (93, 34351), (94, 34360), (95, 34396), (99, 34426), (102, 34471), (103, 34474), (107, 34534), (108, 34537), (111, 34585), (112, 34588), (113, 34603), (114, 34609), (117, 34651), (118, 34654), (123, 34756), (125, 34789), (127, 34819), (130, 34864), (132, 34894), (135, 34939), (136, 34993),

Gene: EniyanLRS_42 Start: 32588, Stop: 34711, Start Num: 2

Candidate Starts for EniyanLRS_42:

(Start: 2 @32588 has 6 MA's), (4, 32666), (5, 32675), (8, 32741), (12, 32870), (13, 32873), (18, 32930), (19, 32957), (20, 32960), (22, 32996), (26, 33050), (30, 33140), (35, 33215), (38, 33290), (39, 33302), (40, 33311), (44, 33404), (46, 33431), (53, 33548), (55, 33584), (59, 33638), (60, 33656), (62, 33674),

(65, 33698), (67, 33731), (68, 33737), (71, 33764), (73, 33797), (78, 33848), (83, 33872), (93, 34049), (94, 34058), (95, 34094), (99, 34124), (102, 34169), (103, 34172), (107, 34232), (108, 34235), (111, 34283), (112, 34286), (113, 34301), (114, 34307), (117, 34349), (118, 34352), (123, 34454), (125, 34487), (127, 34517), (130, 34562), (132, 34592), (135, 34637), (136, 34691),

Gene: FeliMaine_94 Start: 53421, Stop: 55559, Start Num: 3

Candidate Starts for FeliMaine_94:

(Start: 2 @53412 has 6 MA's), (Start: 3 @53421 has 19 MA's), (5, 53496), (6, 53499), (7, 53511), (11, 53628), (16, 53712), (23, 53850), (25, 53856), (30, 53964), (35, 54039), (36, 54042), (39, 54126), (43, 54192), (44, 54231), (46, 54258), (47, 54264), (48, 54303), (49, 54333), (51, 54351), (54, 54378), (57, 54465), (60, 54492), (64, 54531), (65, 54540), (69, 54588), (70, 54594), (72, 54627), (76, 54672), (78, 54690), (80, 54702), (81, 54708), (88, 54825), (90, 54855), (95, 54942), (96, 54948), (100, 54987), (105, 55056), (107, 55074), (108, 55077), (110, 55122), (111, 55125), (113, 55143), (114, 55149), (124, 55311), (126, 55335), (128, 55389), (129, 55392), (131, 55428), (132, 55440), (133, 55473), (134, 55479),

Gene: Gattaca_93 Start: 53409, Stop: 55550, Start Num: 3

Candidate Starts for Gattaca_93:

(Start: 2 @53400 has 6 MA's), (Start: 3 @53409 has 19 MA's), (5, 53484), (7, 53499), (11, 53616), (16, 53700), (23, 53838), (25, 53844), (30, 53952), (34, 54024), (39, 54114), (43, 54180), (44, 54219), (46, 54246), (47, 54252), (49, 54321), (50, 54333), (51, 54339), (54, 54366), (56, 54447), (58, 54456), (62, 54495), (63, 54507), (64, 54516), (65, 54525), (75, 54648), (77, 54666), (84, 54729), (87, 54765), (94, 54891), (97, 54936), (104, 55032), (106, 55041), (109, 55071), (115, 55143), (120, 55260), (121, 55266), (123, 55284),

Gene: GoongGoong_95 Start: 53215, Stop: 55356, Start Num: 3

Candidate Starts for GoongGoong_95:

(Start: 2 @53206 has 6 MA's), (Start: 3 @53215 has 19 MA's), (5, 53290), (7, 53305), (11, 53422), (16, 53506), (23, 53644), (25, 53650), (30, 53758), (34, 53830), (39, 53920), (43, 53986), (44, 54025), (46, 54052), (47, 54058), (49, 54127), (50, 54139), (51, 54145), (54, 54172), (56, 54253), (58, 54262), (62, 54301), (63, 54313), (64, 54322), (65, 54331), (75, 54454), (77, 54472), (84, 54535), (87, 54571), (94, 54697), (97, 54742), (104, 54838), (106, 54847), (109, 54877), (115, 54949), (120, 55066), (121, 55072), (123, 55090),

Gene: Huphleuff_96 Start: 52984, Stop: 55122, Start Num: 3

Candidate Starts for Huphleuff_96:

(Start: 2 @52975 has 6 MA's), (Start: 3 @52984 has 19 MA's), (5, 53059), (6, 53062), (7, 53074), (11, 53191), (16, 53275), (23, 53413), (25, 53419), (30, 53527), (35, 53602), (36, 53605), (39, 53689), (43, 53755), (44, 53794), (46, 53821), (47, 53827), (48, 53866), (49, 53896), (51, 53914), (54, 53941), (57, 54028), (60, 54055), (64, 54094), (65, 54103), (69, 54151), (70, 54157), (72, 54190), (76, 54235), (78, 54253), (80, 54265), (81, 54271), (88, 54388), (90, 54418), (95, 54505), (96, 54511), (100, 54550), (105, 54619), (107, 54637), (108, 54640), (110, 54685), (111, 54688), (113, 54706), (114, 54712), (124, 54874), (126, 54898), (128, 54952), (129, 54955), (131, 54991), (132, 55003), (133, 55036), (134, 55042),

Gene: JoieB_95 Start: 53584, Stop: 55725, Start Num: 3

Candidate Starts for JoieB_95:

(Start: 2 @53575 has 6 MA's), (Start: 3 @53584 has 19 MA's), (5, 53659), (6, 53662), (7, 53674), (11, 53791), (16, 53875), (23, 54013), (25, 54019), (30, 54127), (35, 54202), (36, 54205), (39, 54289), (43, 54355), (44, 54394), (46, 54421), (47, 54427), (48, 54466), (49, 54496), (50, 54508), (51, 54514), (54, 54541), (56, 54622), (58, 54631), (62, 54670), (63, 54682), (64, 54691), (65, 54700), (75, 54823), (77, 54841), (84, 54904), (86, 54916), (87, 54940), (94, 55066), (97, 55111), (104, 55207), (106, 55216), (109, 55246), (115, 55318), (120, 55435), (121, 55441), (123, 55459),

Gene: Kumao_32 Start: 28241, Stop: 30346, Start Num: 2

Candidate Starts for Kumao_32:

(1, 28079), (Start: 2 @28241 has 6 MA's), (5, 28325), (8, 28391), (10, 28457), (13, 28523), (14, 28529), (15, 28535), (19, 28607), (21, 28640), (22, 28646), (27, 28736), (33, 28859), (38, 28940), (39, 28952), (41, 28991), (42, 29000), (43, 29018), (51, 29177), (52, 29192), (54, 29204), (59, 29294), (66, 29363), (72, 29441), (74, 29471), (76, 29486), (79, 29513), (80, 29516), (82, 29525), (83, 29528), (85, 29555), (89, 29657), (91, 29675), (92, 29681), (94, 29714), (98, 29768), (101, 29810), (104, 29852), (113, 29945), (117, 29990), (122, 30083), (127, 30152), (136, 30326), (137, 30329),

Gene: Lilbit_90 Start: 53544, Stop: 55682, Start Num: 3

Candidate Starts for Lilbit_90:

(Start: 2 @53535 has 6 MA's), (Start: 3 @53544 has 19 MA's), (5, 53619), (6, 53622), (7, 53634), (11, 53751), (16, 53835), (23, 53973), (25, 53979), (30, 54087), (35, 54162), (36, 54165), (39, 54249), (43, 54315), (44, 54354), (46, 54381), (47, 54387), (48, 54426), (49, 54456), (51, 54474), (54, 54501), (57, 54588), (60, 54615), (64, 54654), (65, 54663), (69, 54711), (70, 54717), (72, 54750), (76, 54795), (78, 54813), (80, 54825), (81, 54831), (88, 54948), (90, 54978), (95, 55065), (96, 55071), (100, 55110), (105, 55179), (107, 55197), (108, 55200), (110, 55245), (111, 55248), (113, 55266), (114, 55272), (124, 55434), (126, 55458), (128, 55512), (129, 55515), (131, 55551), (132, 55563), (133, 55596), (134, 55602),

Gene: LittleLaf_92 Start: 53273, Stop: 55411, Start Num: 3

Candidate Starts for LittleLaf_92:

(Start: 2 @53264 has 6 MA's), (Start: 3 @53273 has 19 MA's), (5, 53348), (6, 53351), (7, 53363), (11, 53480), (16, 53564), (23, 53702), (25, 53708), (30, 53816), (35, 53891), (36, 53894), (39, 53978), (43, 54044), (44, 54083), (46, 54110), (47, 54116), (48, 54155), (49, 54185), (51, 54203), (54, 54230), (57, 54317), (60, 54344), (64, 54383), (65, 54392), (69, 54440), (70, 54446), (72, 54479), (76, 54524), (78, 54542), (80, 54554), (81, 54560), (88, 54677), (90, 54707), (95, 54794), (96, 54800), (100, 54839), (105, 54908), (107, 54926), (108, 54929), (110, 54974), (111, 54977), (113, 54995), (114, 55001), (124, 55163), (126, 55187), (128, 55241), (129, 55244), (131, 55280), (132, 55292), (133, 55325), (134, 55331),

Gene: Marvin_88 Start: 53069, Stop: 55204, Start Num: 3

Candidate Starts for Marvin_88:

(Start: 2 @53060 has 6 MA's), (Start: 3 @53069 has 19 MA's), (5, 53144), (6, 53147), (7, 53159), (9, 53273), (11, 53276), (16, 53360), (17, 53363), (23, 53498), (25, 53504), (30, 53612), (35, 53687), (36, 53690), (39, 53774), (43, 53840), (44, 53879), (46, 53906), (47, 53912), (49, 53981), (51, 53999), (52, 54014), (54, 54026), (57, 54113), (60, 54140), (61, 54149), (64, 54179), (65, 54188), (69, 54236), (70, 54242), (72, 54275), (76, 54320), (78, 54338), (80, 54350), (81, 54356), (88, 54473), (95, 54590), (96, 54596), (100, 54635), (105, 54701), (107, 54719), (108, 54722), (110, 54767), (113, 54788), (114, 54794), (119, 54896), (124, 54956), (126, 54980), (128, 55034), (129, 55037), (131, 55073), (132, 55085), (133, 55118), (134, 55124),

Gene: MaryV_45 Start: 32875, Stop: 34998, Start Num: 2

Candidate Starts for MaryV_45:

(Start: 2 @32875 has 6 MA's), (4, 32953), (5, 32962), (8, 33028), (12, 33157), (13, 33160), (18, 33217), (19, 33244), (20, 33247), (22, 33283), (26, 33337), (30, 33427), (35, 33502), (38, 33577), (39, 33589), (40, 33598), (44, 33691), (46, 33718), (53, 33835), (55, 33871), (59, 33925), (60, 33943), (62, 33961), (65, 33985), (67, 34018), (68, 34024), (71, 34051), (73, 34084), (78, 34135), (83, 34159), (93, 34336), (94, 34345), (95, 34381), (99, 34411), (102, 34456), (103, 34459), (107, 34519), (108, 34522), (111, 34570), (112, 34573), (113, 34588), (114, 34594), (117, 34636), (118, 34639), (123, 34741), (125, 34774), (127, 34804), (130, 34849), (132, 34879), (135, 34924), (136, 34978),

Gene: MosMoris_90 Start: 53415, Stop: 55556, Start Num: 3

Candidate Starts for MosMoris_90:

(Start: 2 @53406 has 6 MA's), (Start: 3 @53415 has 19 MA's), (5, 53490), (7, 53505), (11, 53622), (16, 53706), (23, 53844), (25, 53850), (30, 53958), (34, 54030), (39, 54120), (43, 54186), (44, 54225), (46, 54252), (47, 54258), (49, 54327), (50, 54339), (51, 54345), (54, 54372), (56, 54453), (58, 54462), (62, 54501), (63, 54513), (64, 54522), (65, 54531), (75, 54654), (77, 54672), (84, 54735), (87, 54771), (94, 54897), (97, 54942), (104, 55038), (106, 55047), (109, 55077), (115, 55149), (120, 55266), (121, 55272), (123, 55290),

Gene: Poise_95 Start: 52997, Stop: 55138, Start Num: 3

Candidate Starts for Poise_95:

(Start: 2 @52988 has 6 MA's), (Start: 3 @52997 has 19 MA's), (5, 53072), (7, 53087), (11, 53204), (16, 53288), (23, 53426), (25, 53432), (30, 53540), (34, 53612), (39, 53702), (43, 53768), (44, 53807), (46, 53834), (47, 53840), (49, 53909), (50, 53921), (51, 53927), (54, 53954), (56, 54035), (58, 54044), (62, 54083), (63, 54095), (64, 54104), (65, 54113), (75, 54236), (77, 54254), (84, 54317), (87, 54353), (94, 54479), (97, 54524), (104, 54620), (106, 54629), (109, 54659), (115, 54731), (120, 54848), (121, 54854), (123, 54872),

Gene: Pringar_90 Start: 52785, Stop: 54923, Start Num: 3

Candidate Starts for Pringar_90:

(Start: 2 @52776 has 6 MA's), (Start: 3 @52785 has 19 MA's), (5, 52860), (6, 52863), (7, 52875), (11, 52992), (16, 53076), (23, 53214), (25, 53220), (30, 53328), (35, 53403), (36, 53406), (39, 53490), (43, 53556), (44, 53595), (46, 53622), (47, 53628), (48, 53667), (49, 53697), (51, 53715), (54, 53742), (57, 53829), (60, 53856), (61, 53865), (64, 53895), (65, 53904), (69, 53952), (70, 53958), (72, 53991), (76, 54036), (78, 54054), (80, 54066), (81, 54072), (88, 54189), (90, 54219), (95, 54306), (96, 54312), (100, 54351), (105, 54420), (107, 54438), (108, 54441), (110, 54486), (111, 54489), (113, 54507), (114, 54513), (124, 54675), (126, 54699), (128, 54753), (129, 54756), (131, 54792), (132, 54804), (133, 54837), (134, 54843),

Gene: Raela_96 Start: 53548, Stop: 55689, Start Num: 3

Candidate Starts for Raela_96:

(Start: 2 @53539 has 6 MA's), (Start: 3 @53548 has 19 MA's), (5, 53623), (7, 53638), (11, 53755), (16, 53839), (23, 53977), (25, 53983), (30, 54091), (34, 54163), (39, 54253), (43, 54319), (44, 54358), (46, 54385), (47, 54391), (49, 54460), (50, 54472), (51, 54478), (54, 54505), (56, 54586), (58, 54595), (62, 54634), (63, 54646), (64, 54655), (65, 54664), (75, 54787), (77, 54805), (84, 54868), (87, 54904), (94, 55030), (97, 55075), (104, 55171), (106, 55180), (109, 55210), (115, 55282), (120, 55399), (121, 55405), (123, 55423),

Gene: RedRaider77_94 Start: 52942, Stop: 55083, Start Num: 3

Candidate Starts for RedRaider77_94:

(Start: 2 @52933 has 6 MA's), (Start: 3 @52942 has 19 MA's), (5, 53017), (6, 53020), (7, 53032), (11, 53149), (16, 53233), (23, 53371), (25, 53377), (30, 53485), (34, 53557), (39, 53647), (43, 53713), (44, 53752), (46, 53779), (49, 53854), (50, 53866), (51, 53872), (54, 53899), (56, 53980), (58, 53989), (62, 54028), (64, 54049), (65, 54058), (75, 54181), (77, 54199), (84, 54262), (87, 54298), (94, 54424), (97, 54469), (104, 54565), (106, 54574), (109, 54604), (115, 54676), (116, 54694), (120, 54793), (121, 54799), (123, 54817),

Gene: Tesla_90 Start: 52791, Stop: 54932, Start Num: 3

Candidate Starts for Tesla_90:

(Start: 2 @52782 has 6 MA's), (Start: 3 @52791 has 19 MA's), (5, 52866), (7, 52881), (11, 52998), (16, 53082), (23, 53220), (25, 53226), (30, 53334), (34, 53406), (39, 53496), (43, 53562), (44, 53601), (46, 53628), (47, 53634), (49, 53703), (50, 53715), (51, 53721), (54, 53748), (56, 53829), (58, 53838), (62, 53877), (63, 53889), (64, 53898), (65, 53907), (75, 54030), (77, 54048), (84, 54111), (87, 54147), (94,

54273), (97, 54318), (104, 54414), (106, 54423), (109, 54453), (115, 54525), (120, 54642), (121, 54648), (123, 54666),

Gene: VasuNzinga_92 Start: 52880, Stop: 55015, Start Num: 3

Candidate Starts for VasuNzinga_92:

(Start: 2 @52871 has 6 MA's), (Start: 3 @52880 has 19 MA's), (5, 52955), (6, 52958), (7, 52970), (9, 53084), (11, 53087), (16, 53171), (17, 53174), (23, 53309), (25, 53315), (30, 53423), (35, 53498), (36, 53501), (39, 53585), (43, 53651), (44, 53690), (46, 53717), (47, 53723), (49, 53792), (51, 53810), (52, 53825), (54, 53837), (57, 53924), (60, 53951), (61, 53960), (64, 53990), (65, 53999), (69, 54047), (70, 54053), (72, 54086), (76, 54131), (78, 54149), (81, 54167), (88, 54284), (95, 54401), (96, 54407), (100, 54446), (105, 54512), (107, 54530), (108, 54533), (110, 54578), (113, 54599), (114, 54605), (119, 54707), (124, 54767), (126, 54791), (128, 54845), (129, 54848), (131, 54884), (132, 54896), (133, 54929), (134, 54935),

Gene: Wildcat_45 Start: 32885, Stop: 35008, Start Num: 2

Candidate Starts for Wildcat_45:

(Start: 2 @32885 has 6 MA's), (4, 32963), (5, 32972), (8, 33038), (12, 33167), (13, 33170), (18, 33227), (19, 33254), (20, 33257), (22, 33293), (26, 33347), (30, 33437), (35, 33512), (38, 33587), (39, 33599), (40, 33608), (44, 33701), (46, 33728), (53, 33845), (55, 33881), (59, 33935), (60, 33953), (62, 33971), (65, 33995), (67, 34028), (68, 34034), (71, 34061), (73, 34094), (78, 34145), (83, 34169), (93, 34346), (94, 34355), (95, 34391), (99, 34421), (102, 34466), (103, 34469), (107, 34529), (108, 34532), (111, 34580), (112, 34583), (113, 34598), (114, 34604), (117, 34646), (118, 34649), (123, 34751), (125, 34784), (127, 34814), (130, 34859), (132, 34889), (135, 34934), (136, 34988),