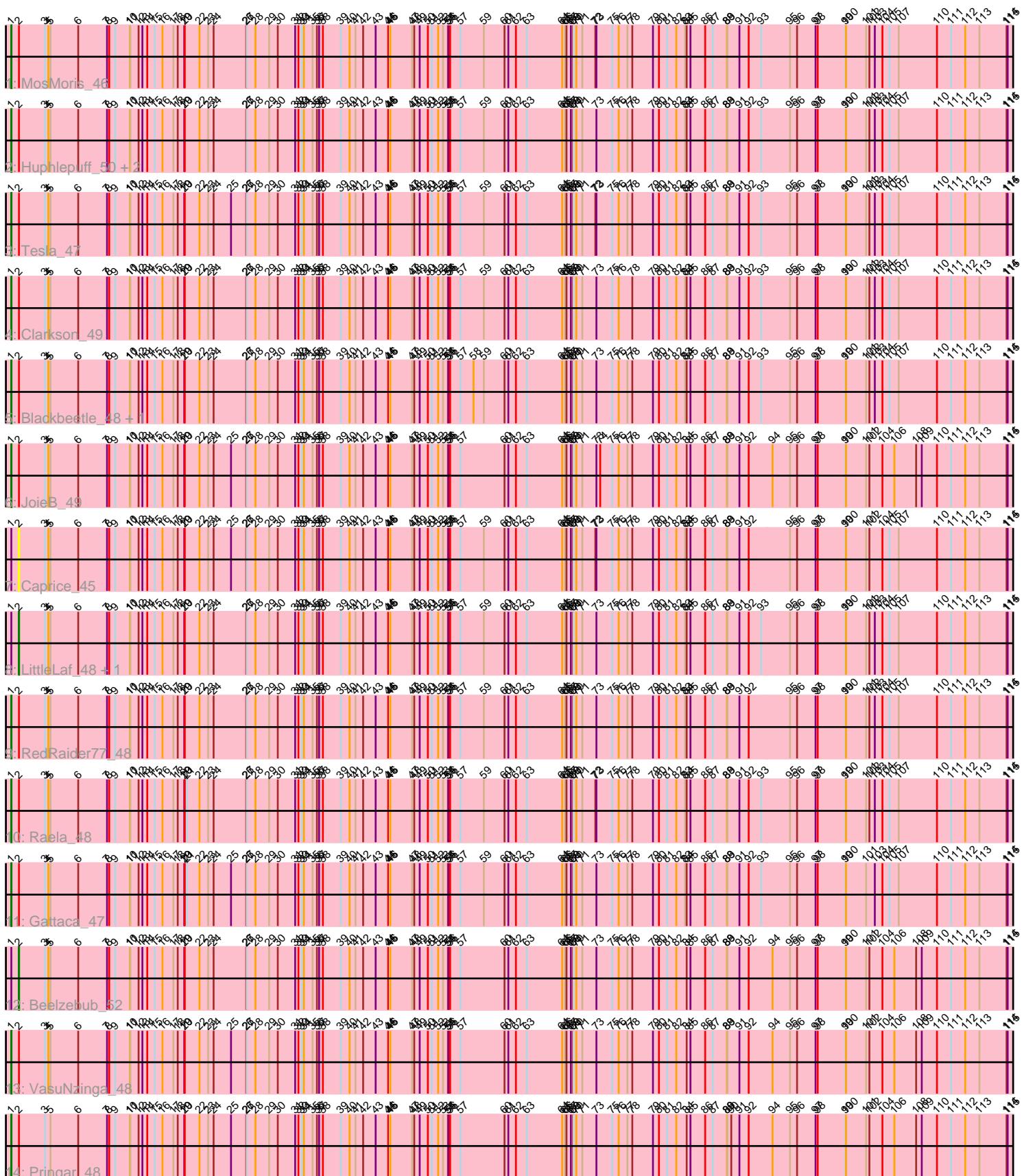


Pham 4109



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 4109 Report

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

Pham number 4109 has 18 members, 2 are drafts.

Phages represented in each track:

- Track 1 : MosMoris_46
- Track 2 : Huphlepuff_50, Marvin_46, Corazon_46
- Track 3 : Tesla_47
- Track 4 : Clarkson_49
- Track 5 : Blackbeetle_48, Poise_48
- Track 6 : JoieB_49
- Track 7 : Caprice_45
- Track 8 : LittleLaf_48, Lilbit_49
- Track 9 : RedRaider77_48
- Track 10 : Raela_48
- Track 11 : Gattaca_47
- Track 12 : Beelzebub_52
- Track 13 : VasuNzinga_48
- Track 14 : Pringar_48

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

The start number called the most often in the published annotations is 1, it was called in 14 of the 16 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Blackbeetle_48, Clarkson_49, Corazon_46, Gattaca_47, Huphlepuff_50, JoieB_49, Marvin_46, MosMoris_46, Poise_48, Pringar_48, Raela_48, RedRaider77_48, Tesla_47, VasuNzinga_48,

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

- Beelzebub_52, Caprice_45, Lilbit_49, LittleLaf_48,

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

-

Summary by start number:

Start 1:

- Found in 18 of 18 (100.0%) of genes in pham
- Manual Annotations of this start: 14 of 16
- Called 77.8% of time when present
- Phage (with cluster) where this start called: Blackbeetle_48 (S), Clarkson_49 (S), Corazon_46 (S), Gattaca_47 (S), Huphlepuff_50 (S), JoieB_49 (S), Marvin_46 (S), MosMoris_46 (S), Poise_48 (S), Pringar_48 (S), Raela_48 (S), RedRaider77_48 (S), Tesla_47 (S), VasuNzinga_48 (S),

Start 2:

- Found in 18 of 18 (100.0%) of genes in pham
- Manual Annotations of this start: 2 of 16
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Beelzebub_52 (S), Caprice_45 (S), Lilbit_49 (S), LittleLaf_48 (S),

Summary by clusters:

There is one cluster represented in this pham: S

Info for manual annotations of cluster S:

- Start number 1 was manually annotated 14 times for cluster S.
- Start number 2 was manually annotated 2 times for cluster S.

Gene Information:

Gene: Beelzebub_52 Start: 21230, Stop: 26710, Start Num: 2

Candidate Starts for Beelzebub_52:

(Start: 1 @21188 has 14 MA's), (Start: 2 @21230 has 2 MA's), (3, 21374), (4, 21392), (5, 21404), (6, 21557), (7, 21716), (8, 21728), (9, 21761), (10, 21842), (11, 21845), (12, 21890), (13, 21911), (14, 21938), (15, 21980), (16, 22022), (17, 22082), (18, 22106), (19, 22142), (20, 22145), (22, 22226), (23, 22274), (24, 22304), (26, 22484), (27, 22487), (28, 22535), (29, 22610), (30, 22658), (31, 22754), (32, 22772), (33, 22790), (34, 22802), (35, 22850), (36, 22874), (37, 22886), (38, 22907), (39, 23006), (40, 23054), (41, 23087), (42, 23129), (43, 23198), (44, 23267), (45, 23276), (46, 23279), (47, 23399), (48, 23411), (49, 23441), (50, 23486), (51, 23507), (52, 23543), (53, 23570), (54, 23597), (55, 23600), (56, 23609), (57, 23666), (60, 23909), (61, 23930), (62, 23972), (63, 24032), (64, 24227), (65, 24242), (66, 24251), (67, 24275), (68, 24287), (69, 24290), (70, 24305), (71, 24338), (73, 24416), (75, 24503), (76, 24539), (77, 24587), (78, 24614), (79, 24728), (80, 24761), (81, 24806), (82, 24857), (84, 24914), (85, 24935), (86, 25016), (87, 25058), (88, 25136), (89, 25139), (91, 25205), (92, 25256), (94, 25388), (95, 25484), (96, 25523), (97, 25625), (98, 25637), (99, 25790), (100, 25793), (101, 25904), (102, 25922), (104, 25994), (106, 26060), (108, 26156), (109, 26183), (110, 26264), (111, 26342), (112, 26420), (113, 26498), (114, 26648), (115, 26654),

Gene: Blackbeetle_48 Start: 20207, Stop: 25756, Start Num: 1

Candidate Starts for Blackbeetle_48:

(Start: 1 @20207 has 14 MA's), (Start: 2 @20249 has 2 MA's), (3, 20393), (4, 20411), (5, 20423), (6, 20576), (7, 20735), (8, 20747), (9, 20780), (10, 20861), (11, 20864), (12, 20909), (13, 20930), (14, 20957), (15, 20999), (16, 21041), (17, 21101), (18, 21125), (19, 21161), (20, 21164), (22, 21245), (23, 21293), (24, 21323), (26, 21503), (27, 21506), (28, 21554), (29, 21629), (30, 21677), (31, 21773), (32, 21791), (33, 21809), (34, 21821), (35, 21869), (36, 21893), (37, 21905), (38, 21926), (39, 22025), (40, 22073), (41, 22106), (42, 22148), (43, 22217), (44, 22286), (45, 22295), (46, 22298), (47, 22418), (48, 22430), (49, 22460), (50, 22505), (51, 22526), (52, 22562), (53, 22589), (54, 22616), (55, 22619), (56,

(22628), (57, 22685), (58, 22757), (59, 22814), (60, 22928), (61, 22949), (62, 22991), (63, 23051), (64, 23246), (65, 23261), (66, 23270), (67, 23294), (68, 23306), (69, 23309), (70, 23324), (71, 23357), (73, 23435), (75, 23522), (76, 23558), (77, 23606), (78, 23633), (79, 23747), (80, 23780), (81, 23825), (82, 23876), (83, 23924), (84, 23933), (85, 23954), (86, 24035), (87, 24077), (88, 24155), (89, 24158), (91, 24224), (92, 24275), (93, 24344), (95, 24500), (96, 24539), (97, 24641), (98, 24653), (99, 24806), (100, 24809), (101, 24920), (102, 24938), (103, 24968), (104, 25010), (105, 25049), (107, 25100), (110, 25310), (111, 25388), (112, 25466), (113, 25544), (114, 25694), (115, 25700),

Gene: Caprice_45 Start: 20319, Stop: 25826, Start Num: 2

Candidate Starts for Caprice_45:

(Start: 1 @20277 has 14 MA's), (Start: 2 @20319 has 2 MA's), (3, 20463), (4, 20481), (5, 20493), (6, 20646), (7, 20805), (8, 20817), (9, 20850), (10, 20931), (11, 20934), (12, 20979), (13, 21000), (14, 21027), (15, 21069), (16, 21111), (17, 21171), (18, 21195), (19, 21231), (20, 21234), (22, 21315), (23, 21363), (24, 21393), (25, 21489), (26, 21573), (27, 21576), (28, 21624), (29, 21699), (30, 21747), (31, 21843), (32, 21861), (33, 21879), (34, 21891), (35, 21939), (36, 21963), (37, 21975), (38, 21996), (39, 22095), (40, 22143), (41, 22176), (42, 22218), (43, 22287), (44, 22356), (45, 22365), (46, 22368), (47, 22488), (48, 22500), (49, 22530), (50, 22575), (51, 22596), (52, 22632), (53, 22659), (54, 22686), (55, 22689), (56, 22698), (57, 22755), (59, 22884), (60, 22998), (61, 23019), (62, 23061), (63, 23121), (64, 23316), (65, 23331), (66, 23340), (67, 23364), (68, 23376), (69, 23379), (70, 23394), (71, 23427), (72, 23499), (73, 23505), (75, 23592), (76, 23628), (77, 23676), (78, 23703), (79, 23817), (80, 23850), (81, 23895), (82, 23946), (83, 23994), (84, 24003), (85, 24024), (86, 24105), (87, 24147), (88, 24225), (89, 24228), (91, 24294), (92, 24345), (95, 24570), (96, 24609), (97, 24711), (98, 24723), (99, 24876), (100, 24879), (101, 24990), (102, 25008), (104, 25080), (105, 25119), (107, 25170), (110, 25380), (111, 25458), (112, 25536), (113, 25614), (114, 25764), (115, 25770),

Gene: Clarkson_49 Start: 20889, Stop: 26438, Start Num: 1

Candidate Starts for Clarkson_49:

(Start: 1 @20889 has 14 MA's), (Start: 2 @20931 has 2 MA's), (3, 21075), (4, 21093), (5, 21105), (6, 21258), (7, 21417), (8, 21429), (9, 21462), (10, 21543), (11, 21546), (12, 21591), (13, 21612), (14, 21639), (15, 21681), (16, 21723), (17, 21783), (18, 21807), (19, 21843), (20, 21846), (22, 21927), (23, 21975), (24, 22005), (26, 22185), (27, 22188), (28, 22236), (29, 22311), (30, 22359), (31, 22455), (32, 22473), (33, 22491), (34, 22503), (35, 22551), (36, 22575), (37, 22587), (38, 22608), (39, 22707), (40, 22755), (41, 22788), (42, 22830), (43, 22899), (44, 22968), (45, 22977), (46, 22980), (47, 23100), (48, 23112), (49, 23142), (50, 23187), (51, 23208), (52, 23244), (53, 23271), (54, 23298), (55, 23301), (56, 23310), (57, 23367), (59, 23496), (60, 23610), (61, 23631), (62, 23673), (63, 23733), (64, 23928), (65, 23943), (66, 23952), (67, 23976), (68, 23988), (69, 23991), (70, 24006), (71, 24039), (73, 24117), (75, 24204), (76, 24240), (78, 24315), (79, 24429), (80, 24462), (81, 24507), (82, 24558), (83, 24606), (84, 24615), (85, 24636), (86, 24717), (87, 24759), (88, 24837), (89, 24840), (91, 24906), (92, 24957), (93, 25026), (95, 25182), (96, 25221), (97, 25323), (98, 25335), (99, 25488), (100, 25491), (101, 25602), (102, 25620), (103, 25650), (104, 25692), (105, 25731), (107, 25782), (110, 25992), (111, 26070), (112, 26148), (113, 26226), (114, 26376), (115, 26382),

Gene: Corazon_46 Start: 20842, Stop: 26391, Start Num: 1

Candidate Starts for Corazon_46:

(Start: 1 @20842 has 14 MA's), (Start: 2 @20884 has 2 MA's), (3, 21028), (4, 21046), (5, 21058), (6, 21211), (7, 21370), (8, 21382), (9, 21415), (10, 21496), (11, 21499), (12, 21544), (13, 21565), (14, 21592), (15, 21634), (16, 21676), (17, 21736), (18, 21760), (19, 21796), (20, 21799), (22, 21880), (23, 21928), (24, 21958), (26, 22138), (27, 22141), (28, 22189), (29, 22264), (30, 22312), (31, 22408), (32, 22426), (33, 22444), (34, 22456), (35, 22504), (36, 22528), (37, 22540), (38, 22561), (39, 22660), (40, 22708), (41, 22741), (42, 22783), (43, 22852), (44, 22921), (45, 22930), (46, 22933), (47, 23053), (48, 23065), (49, 23095), (50, 23140), (51, 23161), (52, 23197), (53, 23224), (54, 23251), (55, 23254), (56, 23263), (57, 23320), (59, 23449), (60, 23563), (61, 23584), (62, 23626), (63, 23686), (64, 23881), (65, 23896), (66, 23905), (67, 23929), (68, 23941), (69, 23944), (70, 23959), (71, 23992), (73, 24070), (75,

(24157), (76, 24193), (77, 24241), (78, 24268), (79, 24382), (80, 24415), (81, 24460), (82, 24511), (83, 24559), (84, 24568), (85, 24589), (86, 24670), (87, 24712), (88, 24790), (89, 24793), (91, 24859), (92, 24910), (93, 24979), (95, 25135), (96, 25174), (97, 25276), (98, 25288), (99, 25441), (100, 25444), (101, 25555), (102, 25573), (103, 25603), (104, 25645), (105, 25684), (107, 25735), (110, 25945), (111, 26023), (112, 26101), (113, 26179), (114, 26329), (115, 26335),

Gene: Gattaca_47 Start: 20069, Stop: 25618, Start Num: 1

Candidate Starts for Gattaca_47:

(Start: 1 @20069 has 14 MA's), (Start: 2 @20111 has 2 MA's), (3, 20255), (4, 20273), (5, 20285), (6, 20438), (7, 20597), (8, 20609), (9, 20642), (10, 20723), (11, 20726), (12, 20771), (13, 20792), (14, 20819), (15, 20861), (16, 20903), (17, 20963), (18, 20987), (19, 21023), (20, 21026), (21, 21038), (22, 21107), (23, 21155), (24, 21185), (25, 21281), (26, 21365), (27, 21368), (28, 21416), (29, 21491), (30, 21539), (31, 21635), (32, 21653), (33, 21671), (34, 21683), (35, 21731), (36, 21755), (37, 21767), (38, 21788), (39, 21887), (40, 21935), (41, 21968), (42, 22010), (43, 22079), (44, 22148), (45, 22157), (46, 22160), (47, 22280), (48, 22292), (49, 22322), (50, 22367), (51, 22388), (52, 22424), (53, 22451), (54, 22478), (55, 22481), (56, 22490), (57, 22547), (59, 22676), (60, 22790), (61, 22811), (62, 22853), (63, 22913), (64, 23108), (65, 23123), (66, 23132), (67, 23156), (68, 23168), (69, 23171), (70, 23186), (71, 23219), (73, 23297), (75, 23384), (76, 23420), (77, 23468), (78, 23495), (79, 23609), (80, 23642), (81, 23687), (82, 23738), (83, 23786), (84, 23795), (85, 23816), (86, 23897), (87, 23939), (88, 24017), (89, 24020), (91, 24086), (92, 24137), (93, 24206), (95, 24362), (96, 24401), (97, 24503), (98, 24515), (99, 24668), (100, 24671), (101, 24782), (103, 24830), (104, 24872), (105, 24911), (107, 24962), (110, 25172), (111, 25250), (112, 25328), (113, 25406), (114, 25556), (115, 25562),

Gene: Huphlepuff_50 Start: 20694, Stop: 26243, Start Num: 1

Candidate Starts for Huphlepuff_50:

(Start: 1 @20694 has 14 MA's), (Start: 2 @20736 has 2 MA's), (3, 20880), (4, 20898), (5, 20910), (6, 21063), (7, 21222), (8, 21234), (9, 21267), (10, 21348), (11, 21351), (12, 21396), (13, 21417), (14, 21444), (15, 21486), (16, 21528), (17, 21588), (18, 21612), (19, 21648), (20, 21651), (22, 21732), (23, 21780), (24, 21810), (26, 21990), (27, 21993), (28, 22041), (29, 22116), (30, 22164), (31, 22260), (32, 22278), (33, 22296), (34, 22308), (35, 22356), (36, 22380), (37, 22392), (38, 22413), (39, 22512), (40, 22560), (41, 22593), (42, 22635), (43, 22704), (44, 22773), (45, 22782), (46, 22785), (47, 22905), (48, 22917), (49, 22947), (50, 22992), (51, 23013), (52, 23049), (53, 23076), (54, 23103), (55, 23106), (56, 23115), (57, 23172), (59, 23301), (60, 23415), (61, 23436), (62, 23478), (63, 23538), (64, 23733), (65, 23748), (66, 23757), (67, 23781), (68, 23793), (69, 23796), (70, 23811), (71, 23844), (73, 23922), (75, 24009), (76, 24045), (77, 24093), (78, 24120), (79, 24234), (80, 24267), (81, 24312), (82, 24363), (83, 24411), (84, 24420), (85, 24441), (86, 24522), (87, 24564), (88, 24642), (89, 24645), (91, 24711), (92, 24762), (93, 24831), (95, 24987), (96, 25026), (97, 25128), (98, 25140), (99, 25293), (100, 25296), (101, 25407), (102, 25425), (103, 25455), (104, 25497), (105, 25536), (107, 25587), (110, 25797), (111, 25875), (112, 25953), (113, 26031), (114, 26181), (115, 26187),

Gene: JoieB_49 Start: 20913, Stop: 26435, Start Num: 1

Candidate Starts for JoieB_49:

(Start: 1 @20913 has 14 MA's), (Start: 2 @20955 has 2 MA's), (3, 21099), (4, 21117), (5, 21129), (6, 21282), (7, 21441), (8, 21453), (9, 21486), (10, 21567), (11, 21570), (12, 21615), (13, 21636), (14, 21663), (15, 21705), (16, 21747), (17, 21807), (18, 21831), (19, 21867), (20, 21870), (22, 21951), (23, 21999), (24, 22029), (25, 22125), (26, 22209), (27, 22212), (28, 22260), (29, 22335), (30, 22383), (31, 22479), (32, 22497), (33, 22515), (34, 22527), (35, 22575), (36, 22599), (37, 22611), (38, 22632), (39, 22731), (40, 22779), (41, 22812), (42, 22854), (43, 22923), (44, 22992), (45, 23001), (46, 23004), (47, 23124), (48, 23136), (49, 23166), (50, 23211), (51, 23232), (52, 23268), (53, 23295), (54, 23322), (55, 23325), (56, 23334), (57, 23391), (60, 23634), (61, 23655), (62, 23697), (63, 23757), (64, 23952), (65, 23967), (66, 23976), (67, 24000), (68, 24012), (69, 24015), (70, 24030), (71, 24063), (73, 24141), (74, 24162), (75, 24228), (76, 24264), (77, 24312), (78, 24339), (79, 24453), (80, 24486), (81, 24531), (82, 24582), (84, 24639), (85, 24660), (86, 24741), (87, 24783), (88, 24861), (89, 24864), (91, 24930), (92,

(24981), (94, 25113), (95, 25209), (96, 25248), (97, 25350), (98, 25362), (99, 25515), (100, 25518), (101, 25629), (102, 25647), (104, 25719), (106, 25785), (108, 25881), (109, 25908), (110, 25989), (111, 26067), (112, 26145), (113, 26223), (114, 26373), (115, 26379),

Gene: Lilbit_49 Start: 20932, Stop: 26439, Start Num: 2

Candidate Starts for Lilbit_49:

(Start: 1 @20890 has 14 MA's), (Start: 2 @20932 has 2 MA's), (3, 21076), (4, 21094), (5, 21106), (6, 21259), (7, 21418), (8, 21430), (9, 21463), (10, 21544), (11, 21547), (12, 21592), (13, 21613), (14, 21640), (15, 21682), (16, 21724), (17, 21784), (18, 21808), (19, 21844), (20, 21847), (22, 21928), (23, 21976), (24, 22006), (26, 22186), (27, 22189), (28, 22237), (29, 22312), (30, 22360), (31, 22456), (32, 22474), (33, 22492), (34, 22504), (35, 22552), (36, 22576), (37, 22588), (38, 22609), (39, 22708), (40, 22756), (41, 22789), (42, 22831), (43, 22900), (44, 22969), (45, 22978), (46, 22981), (47, 23101), (48, 23113), (49, 23143), (50, 23188), (51, 23209), (52, 23245), (53, 23272), (54, 23299), (55, 23302), (56, 23311), (57, 23368), (59, 23497), (60, 23611), (61, 23632), (62, 23674), (63, 23734), (64, 23929), (65, 23944), (66, 23953), (67, 23977), (68, 23989), (69, 23992), (70, 24007), (71, 24040), (73, 24118), (75, 24205), (76, 24241), (77, 24289), (78, 24316), (79, 24430), (80, 24463), (81, 24508), (82, 24559), (83, 24607), (84, 24616), (85, 24637), (86, 24718), (87, 24760), (88, 24838), (89, 24841), (91, 24907), (92, 24958), (93, 25027), (95, 25183), (96, 25222), (97, 25324), (98, 25336), (99, 25489), (100, 25492), (101, 25603), (102, 25621), (103, 25651), (104, 25693), (105, 25732), (107, 25783), (110, 25993), (111, 26071), (112, 26149), (113, 26227), (114, 26377), (115, 26383),

Gene: LittleLaf_48 Start: 20661, Stop: 26168, Start Num: 2

Candidate Starts for LittleLaf_48:

(Start: 1 @20619 has 14 MA's), (Start: 2 @20661 has 2 MA's), (3, 20805), (4, 20823), (5, 20835), (6, 20988), (7, 21147), (8, 21159), (9, 21192), (10, 21273), (11, 21276), (12, 21321), (13, 21342), (14, 21369), (15, 21411), (16, 21453), (17, 21513), (18, 21537), (19, 21573), (20, 21576), (22, 21657), (23, 21705), (24, 21735), (26, 21915), (27, 21918), (28, 21966), (29, 22041), (30, 22089), (31, 22185), (32, 22203), (33, 22221), (34, 22233), (35, 22281), (36, 22305), (37, 22317), (38, 22338), (39, 22437), (40, 22485), (41, 22518), (42, 22560), (43, 22629), (44, 22698), (45, 22707), (46, 22710), (47, 22830), (48, 22842), (49, 22872), (50, 22917), (51, 22938), (52, 22974), (53, 23001), (54, 23028), (55, 23031), (56, 23040), (57, 23097), (59, 23226), (60, 23340), (61, 23361), (62, 23403), (63, 23463), (64, 23658), (65, 23673), (66, 23682), (67, 23706), (68, 23718), (69, 23721), (70, 23736), (71, 23769), (73, 23847), (75, 23934), (76, 23970), (77, 24018), (78, 24045), (79, 24159), (80, 24192), (81, 24237), (82, 24288), (83, 24336), (84, 24345), (85, 24366), (86, 24447), (87, 24489), (88, 24567), (89, 24570), (91, 24636), (92, 24687), (93, 24756), (95, 24912), (96, 24951), (97, 25053), (98, 25065), (99, 25218), (100, 25221), (101, 25332), (102, 25350), (103, 25380), (104, 25422), (105, 25461), (107, 25512), (110, 25722), (111, 25800), (112, 25878), (113, 25956), (114, 26106), (115, 26112),

Gene: Marvin_46 Start: 20889, Stop: 26438, Start Num: 1

Candidate Starts for Marvin_46:

(Start: 1 @20889 has 14 MA's), (Start: 2 @20931 has 2 MA's), (3, 21075), (4, 21093), (5, 21105), (6, 21258), (7, 21417), (8, 21429), (9, 21462), (10, 21543), (11, 21546), (12, 21591), (13, 21612), (14, 21639), (15, 21681), (16, 21723), (17, 21783), (18, 21807), (19, 21843), (20, 21846), (22, 21927), (23, 21975), (24, 22005), (26, 22185), (27, 22188), (28, 22236), (29, 22311), (30, 22359), (31, 22455), (32, 22473), (33, 22491), (34, 22503), (35, 22551), (36, 22575), (37, 22587), (38, 22608), (39, 22707), (40, 22755), (41, 22788), (42, 22830), (43, 22899), (44, 22968), (45, 22977), (46, 22980), (47, 23100), (48, 23112), (49, 23142), (50, 23187), (51, 23208), (52, 23244), (53, 23271), (54, 23298), (55, 23301), (56, 23310), (57, 23367), (59, 23496), (60, 23610), (61, 23631), (62, 23673), (63, 23733), (64, 23928), (65, 23943), (66, 23952), (67, 23976), (68, 23988), (69, 23991), (70, 24006), (71, 24039), (73, 24117), (75, 24204), (76, 24240), (77, 24288), (78, 24315), (79, 24429), (80, 24462), (81, 24507), (82, 24558), (83, 24606), (84, 24615), (85, 24636), (86, 24717), (87, 24759), (88, 24837), (89, 24840), (91, 24906), (92, 24957), (93, 25026), (95, 25182), (96, 25221), (97, 25323), (98, 25335), (99, 25488), (100, 25491), (101, 25602), (102, 25620), (103, 25650), (104, 25692), (105, 25731), (107, 25782), (110, 25992),

(111, 26070), (112, 26148), (113, 26226), (114, 26376), (115, 26382),

Gene: MosMoris_46 Start: 20069, Stop: 25618, Start Num: 1

Candidate Starts for MosMoris_46:

(Start: 1 @20069 has 14 MA's), (Start: 2 @20111 has 2 MA's), (3, 20255), (4, 20273), (5, 20285), (6, 20438), (7, 20597), (8, 20609), (9, 20642), (10, 20723), (11, 20726), (12, 20771), (13, 20792), (14, 20819), (15, 20861), (16, 20903), (17, 20963), (18, 20987), (19, 21023), (20, 21026), (22, 21107), (23, 21155), (24, 21185), (26, 21365), (27, 21368), (28, 21416), (29, 21491), (30, 21539), (31, 21635), (32, 21653), (33, 21671), (34, 21683), (35, 21731), (36, 21755), (37, 21767), (38, 21788), (39, 21887), (40, 21935), (41, 21968), (42, 22010), (43, 22079), (44, 22148), (45, 22157), (46, 22160), (47, 22280), (48, 22292), (49, 22322), (50, 22367), (51, 22388), (52, 22424), (53, 22451), (54, 22478), (55, 22481), (56, 22490), (57, 22547), (59, 22676), (60, 22790), (61, 22811), (62, 22853), (63, 22913), (64, 23108), (65, 23123), (66, 23132), (67, 23156), (68, 23168), (69, 23171), (70, 23186), (71, 23219), (72, 23291), (73, 23297), (75, 23384), (76, 23420), (77, 23468), (78, 23495), (79, 23609), (80, 23642), (81, 23687), (82, 23738), (83, 23786), (84, 23795), (85, 23816), (86, 23897), (87, 23939), (88, 24017), (89, 24020), (91, 24086), (92, 24137), (93, 24206), (95, 24362), (96, 24401), (97, 24503), (98, 24515), (99, 24668), (100, 24671), (101, 24782), (102, 24800), (103, 24830), (104, 24872), (105, 24911), (107, 24962), (110, 25172), (111, 25250), (112, 25328), (113, 25406), (114, 25556), (115, 25562),

Gene: Poise_48 Start: 20207, Stop: 25756, Start Num: 1

Candidate Starts for Poise_48:

(Start: 1 @20207 has 14 MA's), (Start: 2 @20249 has 2 MA's), (3, 20393), (4, 20411), (5, 20423), (6, 20576), (7, 20735), (8, 20747), (9, 20780), (10, 20861), (11, 20864), (12, 20909), (13, 20930), (14, 20957), (15, 20999), (16, 21041), (17, 21101), (18, 21125), (19, 21161), (20, 21164), (22, 21245), (23, 21293), (24, 21323), (26, 21503), (27, 21506), (28, 21554), (29, 21629), (30, 21677), (31, 21773), (32, 21791), (33, 21809), (34, 21821), (35, 21869), (36, 21893), (37, 21905), (38, 21926), (39, 22025), (40, 22073), (41, 22106), (42, 22148), (43, 22217), (44, 22286), (45, 22295), (46, 22298), (47, 22418), (48, 22430), (49, 22460), (50, 22505), (51, 22526), (52, 22562), (53, 22589), (54, 22616), (55, 22619), (56, 22628), (57, 22685), (58, 22757), (59, 22814), (60, 22928), (61, 22949), (62, 22991), (63, 23051), (64, 23246), (65, 23261), (66, 23270), (67, 23294), (68, 23306), (69, 23309), (70, 23324), (71, 23357), (73, 23435), (75, 23522), (76, 23558), (77, 23606), (78, 23633), (79, 23747), (80, 23780), (81, 23825), (82, 23876), (83, 23924), (84, 23933), (85, 23954), (86, 24035), (87, 24077), (88, 24155), (89, 24158), (91, 24224), (92, 24275), (93, 24344), (95, 24500), (96, 24539), (97, 24641), (98, 24653), (99, 24806), (100, 24809), (101, 24920), (102, 24938), (103, 24968), (104, 25010), (105, 25049), (107, 25100), (110, 25310), (111, 25388), (112, 25466), (113, 25544), (114, 25694), (115, 25700),

Gene: Pringar_48 Start: 20522, Stop: 26044, Start Num: 1

Candidate Starts for Pringar_48:

(Start: 1 @20522 has 14 MA's), (Start: 2 @20564 has 2 MA's), (3, 20708), (5, 20738), (6, 20891), (7, 21050), (8, 21062), (9, 21095), (10, 21176), (11, 21179), (12, 21224), (13, 21245), (14, 21272), (15, 21314), (16, 21356), (17, 21416), (18, 21440), (19, 21476), (20, 21479), (22, 21560), (23, 21608), (24, 21638), (25, 21734), (26, 21818), (27, 21821), (28, 21869), (29, 21944), (30, 21992), (31, 22088), (32, 22106), (33, 22124), (34, 22136), (35, 22184), (36, 22208), (37, 22220), (38, 22241), (39, 22340), (40, 22388), (41, 22421), (42, 22463), (43, 22532), (44, 22601), (45, 22610), (46, 22613), (47, 22733), (48, 22745), (49, 22775), (50, 22820), (51, 22841), (52, 22877), (53, 22904), (54, 22931), (55, 22934), (56, 22943), (57, 23000), (60, 23243), (61, 23264), (62, 23306), (63, 23366), (64, 23561), (65, 23576), (66, 23585), (67, 23609), (68, 23621), (69, 23624), (70, 23639), (71, 23672), (73, 23750), (75, 23837), (76, 23873), (77, 23921), (78, 23948), (79, 24062), (80, 24095), (81, 24140), (82, 24191), (84, 24248), (85, 24269), (86, 24350), (87, 24392), (88, 24470), (89, 24473), (90, 24494), (91, 24539), (92, 24590), (94, 24722), (95, 24818), (96, 24857), (97, 24959), (98, 24971), (99, 25124), (100, 25127), (101, 25238), (102, 25256), (104, 25328), (106, 25394), (108, 25490), (109, 25517), (110, 25598), (111, 25676), (112, 25754), (113, 25832), (114, 25982), (115, 25988),

Gene: Raela_48 Start: 20762, Stop: 26311, Start Num: 1

Candidate Starts for Raela_48:

(Start: 1 @20762 has 14 MA's), (Start: 2 @20804 has 2 MA's), (3, 20948), (4, 20966), (5, 20978), (6, 21131), (7, 21290), (8, 21302), (9, 21335), (10, 21416), (11, 21419), (12, 21464), (13, 21485), (14, 21512), (15, 21554), (16, 21596), (17, 21656), (18, 21680), (19, 21716), (20, 21719), (21, 21731), (22, 21800), (23, 21848), (24, 21878), (26, 22058), (27, 22061), (28, 22109), (29, 22184), (30, 22232), (31, 22328), (32, 22346), (33, 22364), (34, 22376), (35, 22424), (36, 22448), (37, 22460), (38, 22481), (39, 22580), (40, 22628), (41, 22661), (42, 22703), (43, 22772), (44, 22841), (45, 22850), (46, 22853), (47, 22973), (48, 22985), (49, 23015), (50, 23060), (51, 23081), (52, 23117), (53, 23144), (54, 23171), (55, 23174), (56, 23183), (57, 23240), (59, 23369), (60, 23483), (61, 23504), (62, 23546), (63, 23606), (64, 23801), (65, 23816), (66, 23825), (67, 23849), (68, 23861), (69, 23864), (70, 23879), (71, 23912), (72, 23984), (73, 23990), (75, 24077), (76, 24113), (77, 24161), (78, 24188), (79, 24302), (80, 24335), (81, 24380), (82, 24431), (83, 24479), (84, 24488), (85, 24509), (86, 24590), (87, 24632), (88, 24710), (89, 24713), (91, 24779), (92, 24830), (93, 24899), (95, 25055), (96, 25094), (97, 25196), (98, 25208), (99, 25361), (100, 25364), (101, 25475), (102, 25493), (103, 25523), (104, 25565), (105, 25604), (107, 25655), (110, 25865), (111, 25943), (112, 26021), (113, 26099), (114, 26249), (115, 26255),

Gene: RedRaider77_48 Start: 20663, Stop: 26212, Start Num: 1

Candidate Starts for RedRaider77_48:

(Start: 1 @20663 has 14 MA's), (Start: 2 @20705 has 2 MA's), (3, 20849), (4, 20867), (5, 20879), (6, 21032), (7, 21191), (8, 21203), (9, 21236), (10, 21317), (11, 21320), (12, 21365), (13, 21386), (14, 21413), (15, 21455), (16, 21497), (17, 21557), (18, 21581), (19, 21617), (20, 21620), (22, 21701), (23, 21749), (24, 21779), (26, 21959), (27, 21962), (28, 22010), (29, 22085), (30, 22133), (31, 22229), (32, 22247), (33, 22265), (34, 22277), (35, 22325), (36, 22349), (37, 22361), (38, 22382), (39, 22481), (40, 22529), (41, 22562), (42, 22604), (43, 22673), (44, 22742), (45, 22751), (46, 22754), (47, 22874), (48, 22886), (49, 22916), (50, 22961), (51, 22982), (52, 23018), (53, 23045), (54, 23072), (55, 23075), (56, 23084), (57, 23141), (59, 23270), (60, 23384), (61, 23405), (62, 23447), (63, 23507), (64, 23702), (65, 23717), (66, 23726), (67, 23750), (68, 23762), (69, 23765), (70, 23780), (71, 23813), (73, 23891), (75, 23978), (76, 24014), (77, 24062), (78, 24089), (79, 24203), (80, 24236), (81, 24281), (82, 24332), (83, 24380), (84, 24389), (85, 24410), (86, 24491), (87, 24533), (88, 24611), (89, 24614), (91, 24680), (92, 24731), (95, 24956), (96, 24995), (97, 25097), (98, 25109), (99, 25262), (100, 25265), (101, 25376), (102, 25394), (103, 25424), (104, 25466), (105, 25505), (107, 25556), (110, 25766), (111, 25844), (112, 25922), (113, 26000), (114, 26150), (115, 26156),

Gene: Tesla_47 Start: 20512, Stop: 26061, Start Num: 1

Candidate Starts for Tesla_47:

(Start: 1 @20512 has 14 MA's), (Start: 2 @20554 has 2 MA's), (3, 20698), (4, 20716), (5, 20728), (6, 20881), (7, 21040), (8, 21052), (9, 21085), (10, 21166), (11, 21169), (12, 21214), (13, 21235), (14, 21262), (15, 21304), (16, 21346), (17, 21406), (18, 21430), (19, 21466), (20, 21469), (22, 21550), (23, 21598), (24, 21628), (25, 21724), (26, 21808), (27, 21811), (28, 21859), (29, 21934), (30, 21982), (31, 22078), (32, 22096), (33, 22114), (34, 22126), (35, 22174), (36, 22198), (37, 22210), (38, 22231), (39, 22330), (40, 22378), (41, 22411), (42, 22453), (43, 22522), (44, 22591), (45, 22600), (46, 22603), (47, 22723), (48, 22735), (49, 22765), (50, 22810), (51, 22831), (52, 22867), (53, 22894), (54, 22921), (55, 22924), (56, 22933), (57, 22990), (59, 23119), (60, 23233), (61, 23254), (62, 23296), (63, 23356), (64, 23551), (65, 23566), (66, 23575), (67, 23599), (68, 23611), (69, 23614), (70, 23629), (71, 23662), (72, 23734), (73, 23740), (75, 23827), (76, 23863), (77, 23911), (78, 23938), (79, 24052), (80, 24085), (81, 24130), (82, 24181), (83, 24229), (84, 24238), (85, 24259), (86, 24340), (87, 24382), (88, 24460), (89, 24463), (91, 24529), (92, 24580), (93, 24649), (95, 24805), (96, 24844), (97, 24946), (98, 24958), (99, 25111), (100, 25114), (101, 25225), (102, 25243), (103, 25273), (104, 25315), (105, 25354), (107, 25405), (110, 25615), (111, 25693), (112, 25771), (113, 25849), (114, 25999), (115, 26005),

Gene: VasuNzinga_48 Start: 20096, Stop: 25618, Start Num: 1

Candidate Starts for VasuNzinga_48:

(Start: 1 @20096 has 14 MA's), (Start: 2 @20138 has 2 MA's), (3, 20282), (4, 20300), (5, 20312), (6, 20465), (7, 20624), (8, 20636), (9, 20669), (10, 20750), (11, 20753), (12, 20798), (13, 20819), (14, 20846), (15, 20888), (16, 20930), (17, 20990), (18, 21014), (19, 21050), (20, 21053), (22, 21134), (23, 21182), (24, 21212), (25, 21308), (26, 21392), (27, 21395), (28, 21443), (29, 21518), (30, 21566), (31, 21662), (32, 21680), (33, 21698), (34, 21710), (35, 21758), (36, 21782), (37, 21794), (38, 21815), (39, 21914), (40, 21962), (41, 21995), (42, 22037), (43, 22106), (44, 22175), (45, 22184), (46, 22187), (47, 22307), (48, 22319), (49, 22349), (50, 22394), (51, 22415), (52, 22451), (53, 22478), (54, 22505), (55, 22508), (56, 22517), (57, 22574), (60, 22817), (61, 22838), (62, 22880), (63, 22940), (64, 23135), (65, 23150), (66, 23159), (67, 23183), (68, 23195), (69, 23198), (70, 23213), (71, 23246), (73, 23324), (75, 23411), (76, 23447), (77, 23495), (78, 23522), (79, 23636), (80, 23669), (81, 23714), (82, 23765), (84, 23822), (85, 23843), (86, 23924), (87, 23966), (88, 24044), (89, 24047), (91, 24113), (92, 24164), (94, 24296), (95, 24392), (96, 24431), (97, 24533), (98, 24545), (99, 24698), (100, 24701), (101, 24812), (102, 24830), (104, 24902), (106, 24968), (108, 25064), (109, 25091), (110, 25172), (111, 25250), (112, 25328), (113, 25406), (114, 25556), (115, 25562),