



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 304968 Report

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

Pham number 304968 has 76 members, 18 are drafts.

Phages represented in each track:

- Track 1 : PerroGrande22_40
- Track 2 : Pepy6_036
- Track 3 : Poco6_037
- Track 4 : Figliar_33, Aflac_33
- Track 5 : PestoPenguin_36, Gusicorn_33, BetterYeti_33, Aloe25_36
- Track 6 : ShaggyRogers_33
- Track 7 : ArtetaBall_34, Madvan_33, CWormy_33, Untouchable_33, Nadmeg_34
- Track 8 : Eddiemania_34
- Track 9 : JulesRay_30, Dancer_30, Bugg_31, Football_31
- Track 10 : Mossy_34, Blanky_33
- Track 11 : MajinBuu_33, OlgasClover_33, TenaciousP_34, Tonaltzin_35
- Track 12 : Luthien_34
- Track 13 : Glintora_33
- Track 14 : Rickmore_32
- Track 15 : Jodelie19_34
- Track 16 : Trufflozitus_30
- Track 17 : Chikenjars_33
- Track 18 : Demure_32, Dialga_34, Arataki_32
- Track 19 : Vardy_33, Burley_33, Runhaar_33
- Track 20 : Kerry_30, Tanis_30, Magel_31, NoPickles_30, Gravy_30
- Track 21 : BluerMoon_33
- Track 22 : Roney_30, Copybara_30, Gill_30, Odesza_30
- Track 23 : Duffington_33
- Track 24 : Crocheter_33, Hydrus_34, Kenosha_33, Zeph_34
- Track 25 : Mysticmoon_32
- Track 26 : EndAve_33, AlainaMarie_33
- Track 27 : Schwartz33_34
- Track 28 : Captrips_30, Avazak_30
- Track 29 : Phepper_33
- Track 30 : Citrus_32, Nithya_33
- Track 31 : ChickyNuggy_31
- Track 32 : SweetCrkHerbs_32, Perkunas_32, Talon44_31
- Track 33 : Pherobrine_32
- Track 34 : Artorias_30, FortCran_30
- Track 35 : Conley_31
- Track 36 : Hortihabitatio_33
- Track 37 : Petite_32

- Track 38 : Fazel_31
- Track 39 : Secretariat_31
- Track 40 : OhMyWard_33
- Track 41 : Tairn4Wing_32

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 58 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac_33, AlainaMarie_33, Aloe25_36, Arataki_32, ArtetaBall_34, Artorias_30, Avazak_30, BetterYeti_33, Blanky_33, BluerMoon_33, Bugg_31, Burley_33, CWormy_33, Captrips_30, Copybara_30, ChickyNuggy_31, Chikenjars_33, Citrus_32, Conley_31, Crocheter_33, Dancer_30, Demure_32, Dialga_34, Duffington_33, Eddiemania_34, EndAve_33, Fazel_31, Figliar_33, Football_31, FortCran_30, Gill_30, Glintora_33, Gravy_30, Gusicorn_33, Hortihabitatio_33, Hydrus_34, Jodelie19_34, JulesRay_30, Kenosha_33, Kerry_30, Luthien_34, Madvan_33, Magel_31, MajinBuu_33, Mossy_34, Mysticmoon_32, Nadmeg_34, Nithya_33, NoPickles_30, Odesza_30, OhMyWard_33, OlgasClover_33, Pepy6_036, Perunas_32, PerroGrande22_40, PestoPenguin_36, Petite_32, Phepper_33, Pherobrine_32, Poco6_037, Rickmore_32, Roney_30, Runhaar_33, Schwartz33_34, Secretariat_31, ShaggyRogers_33, SweetCrkHerbs_32, Tairn4Wing_32, Talon44_31, Tanis_30, TenaciousP_34, Tonaltzin_35, Trufflozitus_30, Untouchable_33, Vardy_33, Zeph_34,

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

-

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

-

Summary by start number:

Start 1:

- Found in 76 of 76 (100.0%) of genes in pham
- Manual Annotations of this start: 58 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aflac_33 (DJ), AlainaMarie_33 (DJ), Aloe25_36 (DJ), Arataki_32 (DJ), ArtetaBall_34 (DJ), Artorias_30 (DJ), Avazak_30 (DJ), BetterYeti_33 (DJ), Blanky_33 (DJ), BluerMoon_33 (DJ), Bugg_31 (DJ), Burley_33 (DJ), CWormy_33 (DJ), Captrips_30 (DJ), Copybara_30 (DJ), ChickyNuggy_31 (DJ), Chikenjars_33 (DJ), Citrus_32 (DJ), Conley_31 (DJ), Crocheter_33 (DJ), Dancer_30 (DJ), Demure_32 (DJ), Dialga_34 (DJ), Duffington_33 (DJ), Eddiemania_34 (DJ), EndAve_33 (DJ), Fazel_31 (DJ), Figliar_33 (DJ), Football_31 (DJ), FortCran_30 (DJ), Gill_30 (DJ), Glintora_33 (DJ), Gravy_30 (DJ), Gusicorn_33 (DJ), Hortihabitatio_33 (DJ), Hydrus_34 (DJ), Jodelie19_34 (DJ), JulesRay_30 (DJ), Kenosha_33 (DJ), Kerry_30 (DJ), Luthien_34 (DJ), Madvan_33 (DJ), Magel_31 (DJ), MajinBuu_33 (DJ), Mossy_34 (DJ), Mysticmoon_32 (DJ), Nadmeg_34 (DJ), Nithya_33 (DJ), NoPickles_30 (DJ), Odesza_30 (DJ),

OhMyWard_33 (DJ), OlgasClover_33 (DJ), Pepy6_036 (CC), Perkunas_32 (DJ), PerroGrande22_40 (CC), PestoPenguin_36 (DJ), Petito_32 (DJ), Phepper_33 (DJ), Pherobrine_32 (DJ), Poco6_037 (CC), Rickmore_32 (DJ), Roney_30 (DJ), Runhaar_33 (DJ), Schwartz33_34 (DJ), Secretariat_31 (DJ), ShaggyRogers_33 (DJ), SweetCrkHerbs_32 (DJ), Tairn4Wing_32 (DJ), Talon44_31 (DJ), Tanis_30 (DJ), TenaciousP_34 (DJ), Tonaltzin_35 (DJ), Trufflozitus_30 (DJ), Untouchable_33 (DJ), Vardy_33 (DJ), Zeph_34 (DJ),

Summary by clusters:

There are 2 clusters represented in this pham: CC, DJ,

Info for manual annotations of cluster DJ:

•Start number 1 was manually annotated 58 times for cluster DJ.

Gene Information:

Gene: Aflac_33 Start: 28623, Stop: 29474, Start Num: 1

Candidate Starts for Aflac_33:

(Start: 1 @28623 has 58 MA's), (2, 28644), (4, 28677), (5, 28725), (6, 28740), (13, 28887), (18, 28929), (19, 28932), (22, 28956), (25, 28992), (26, 29010), (27, 29013), (31, 29043), (38, 29094), (40, 29127), (41, 29142), (42, 29148), (62, 29331), (65, 29355), (71, 29394), (73, 29400), (74, 29439), (75, 29469),

Gene: AlainaMarie_33 Start: 28607, Stop: 29458, Start Num: 1

Candidate Starts for AlainaMarie_33:

(Start: 1 @28607 has 58 MA's), (2, 28628), (4, 28661), (5, 28709), (6, 28724), (8, 28799), (9, 28802), (13, 28871), (18, 28913), (19, 28916), (22, 28940), (25, 28976), (26, 28994), (27, 28997), (30, 29009), (35, 29054), (38, 29078), (40, 29111), (42, 29132), (50, 29198), (57, 29279), (62, 29315), (65, 29339), (71, 29378), (73, 29384), (75, 29453),

Gene: Aloe25_36 Start: 28397, Stop: 29248, Start Num: 1

Candidate Starts for Aloe25_36:

(Start: 1 @28397 has 58 MA's), (2, 28418), (4, 28451), (5, 28499), (6, 28514), (9, 28592), (13, 28661), (18, 28703), (19, 28706), (22, 28730), (26, 28784), (27, 28787), (35, 28844), (39, 28877), (40, 28901), (42, 28922), (50, 28988), (57, 29069), (61, 29102), (62, 29105), (65, 29129), (71, 29168), (73, 29174), (75, 29243),

Gene: Arataki_32 Start: 27716, Stop: 28567, Start Num: 1

Candidate Starts for Arataki_32:

(Start: 1 @27716 has 58 MA's), (2, 27737), (4, 27770), (5, 27818), (6, 27833), (9, 27911), (13, 27980), (18, 28022), (19, 28025), (22, 28049), (23, 28058), (25, 28085), (30, 28118), (31, 28136), (35, 28163), (39, 28196), (40, 28220), (42, 28241), (50, 28307), (62, 28424), (64, 28439), (71, 28487), (73, 28493), (75, 28562),

Gene: ArtetaBall_34 Start: 28750, Stop: 29601, Start Num: 1

Candidate Starts for ArtetaBall_34:

(Start: 1 @28750 has 58 MA's), (2, 28771), (4, 28804), (5, 28852), (6, 28867), (9, 28945), (13, 29014), (18, 29056), (19, 29059), (22, 29083), (25, 29119), (26, 29137), (27, 29140), (31, 29170), (39, 29230), (40, 29254), (42, 29275), (47, 29320), (62, 29458), (65, 29482), (73, 29527), (75, 29596),

Gene: Artorias_30 Start: 25604, Stop: 26458, Start Num: 1

Candidate Starts for Artorias_30:

(Start: 1 @25604 has 58 MA's), (2, 25625), (7, 25793), (11, 25847), (12, 25850), (13, 25868), (14, 25871), (18, 25910), (19, 25913), (20, 25916), (22, 25937), (23, 25946), (32, 26039), (40, 26111), (43, 26141), (45, 26168), (46, 26171), (48, 26192), (52, 26225), (55, 26246), (56, 26249), (61, 26312), (62, 26315), (66, 26345), (71, 26378),

Gene: Avazak_30 Start: 25611, Stop: 26465, Start Num: 1

Candidate Starts for Avazak_30:

(Start: 1 @25611 has 58 MA's), (2, 25632), (7, 25800), (10, 25818), (11, 25854), (12, 25857), (13, 25875), (14, 25878), (19, 25920), (22, 25944), (23, 25953), (32, 26046), (39, 26094), (40, 26118), (45, 26175), (46, 26178), (48, 26199), (52, 26232), (56, 26256), (61, 26319), (62, 26322), (66, 26352), (71, 26385),

Gene: BetterYeti_33 Start: 28397, Stop: 29248, Start Num: 1

Candidate Starts for BetterYeti_33:

(Start: 1 @28397 has 58 MA's), (2, 28418), (4, 28451), (5, 28499), (6, 28514), (9, 28592), (13, 28661), (18, 28703), (19, 28706), (22, 28730), (26, 28784), (27, 28787), (35, 28844), (39, 28877), (40, 28901), (42, 28922), (50, 28988), (57, 29069), (61, 29102), (62, 29105), (65, 29129), (71, 29168), (73, 29174), (75, 29243),

Gene: Blanky_33 Start: 29590, Stop: 30441, Start Num: 1

Candidate Starts for Blanky_33:

(Start: 1 @29590 has 58 MA's), (2, 29611), (4, 29644), (6, 29707), (10, 29797), (14, 29857), (17, 29884), (19, 29899), (24, 29947), (25, 29959), (27, 29980), (31, 30010), (40, 30094), (42, 30115), (53, 30211), (59, 30283), (62, 30298), (66, 30328), (71, 30361), (73, 30367), (75, 30436),

Gene: BluerMoon_33 Start: 28620, Stop: 29471, Start Num: 1

Candidate Starts for BluerMoon_33:

(Start: 1 @28620 has 58 MA's), (2, 28641), (4, 28674), (5, 28722), (6, 28737), (8, 28812), (9, 28815), (13, 28884), (18, 28926), (19, 28929), (22, 28953), (25, 28989), (26, 29007), (27, 29010), (31, 29040), (35, 29067), (38, 29091), (40, 29124), (41, 29139), (42, 29145), (57, 29292), (62, 29328), (65, 29352), (71, 29391), (73, 29397), (74, 29436), (75, 29466),

Gene: Bugg_31 Start: 25647, Stop: 26501, Start Num: 1

Candidate Starts for Bugg_31:

(Start: 1 @25647 has 58 MA's), (2, 25668), (7, 25836), (11, 25890), (12, 25893), (14, 25914), (18, 25953), (19, 25956), (20, 25959), (22, 25980), (40, 26154), (43, 26184), (45, 26211), (46, 26214), (48, 26235), (52, 26268), (61, 26355), (62, 26358), (66, 26388), (71, 26421),

Gene: Burley_33 Start: 28358, Stop: 29209, Start Num: 1

Candidate Starts for Burley_33:

(Start: 1 @28358 has 58 MA's), (2, 28379), (4, 28412), (5, 28460), (6, 28475), (9, 28553), (13, 28622), (18, 28664), (19, 28667), (22, 28691), (25, 28727), (26, 28745), (27, 28748), (31, 28778), (39, 28838), (40, 28862), (42, 28883), (47, 28928), (62, 29066), (65, 29090), (71, 29129), (72, 29132), (73, 29135), (75, 29204),

Gene: CWormy_33 Start: 28058, Stop: 28909, Start Num: 1

Candidate Starts for CWormy_33:

(Start: 1 @28058 has 58 MA's), (2, 28079), (4, 28112), (5, 28160), (6, 28175), (9, 28253), (13, 28322), (18, 28364), (19, 28367), (22, 28391), (25, 28427), (26, 28445), (27, 28448), (31, 28478), (39, 28538), (40, 28562), (42, 28583), (47, 28628), (62, 28766), (65, 28790), (73, 28835), (75, 28904),

Gene: Captrips_30 Start: 25640, Stop: 26494, Start Num: 1

Candidate Starts for Captrips_30:

(Start: 1 @25640 has 58 MA's), (2, 25661), (7, 25829), (10, 25847), (11, 25883), (12, 25886), (13, 25904), (14, 25907), (19, 25949), (22, 25973), (23, 25982), (32, 26075), (39, 26123), (40, 26147), (45, 26204), (46, 26207), (48, 26228), (52, 26261), (56, 26285), (61, 26348), (62, 26351), (66, 26381), (71, 26414),

Gene: Capybara_30 Start: 25715, Stop: 26569, Start Num: 1

Candidate Starts for Capybara_30:

(Start: 1 @25715 has 58 MA's), (2, 25736), (7, 25904), (11, 25958), (12, 25961), (13, 25979), (14, 25982), (18, 26021), (19, 26024), (20, 26027), (22, 26048), (23, 26057), (39, 26198), (40, 26222), (43, 26252), (45, 26279), (46, 26282), (48, 26303), (52, 26336), (56, 26360), (61, 26423), (62, 26426), (66, 26456), (71, 26489),

Gene: ChickyNuggy_31 Start: 25352, Stop: 26206, Start Num: 1

Candidate Starts for ChickyNuggy_31:

(Start: 1 @25352 has 58 MA's), (2, 25373), (7, 25541), (10, 25559), (11, 25595), (12, 25598), (13, 25616), (14, 25619), (18, 25658), (19, 25661), (20, 25664), (22, 25685), (23, 25694), (40, 25859), (43, 25889), (45, 25916), (46, 25919), (48, 25940), (52, 25973), (55, 25994), (56, 25997), (61, 26060), (62, 26063), (66, 26093), (71, 26126),

Gene: Chikenjars_33 Start: 28610, Stop: 29461, Start Num: 1

Candidate Starts for Chikenjars_33:

(Start: 1 @28610 has 58 MA's), (2, 28631), (4, 28664), (5, 28712), (6, 28727), (8, 28802), (9, 28805), (13, 28874), (18, 28916), (19, 28919), (22, 28943), (25, 28979), (26, 28997), (27, 29000), (31, 29030), (35, 29057), (38, 29081), (40, 29114), (42, 29135), (57, 29282), (62, 29318), (65, 29342), (71, 29381), (73, 29387), (75, 29456),

Gene: Citrus_32 Start: 28614, Stop: 29465, Start Num: 1

Candidate Starts for Citrus_32:

(Start: 1 @28614 has 58 MA's), (2, 28635), (4, 28668), (5, 28716), (6, 28731), (8, 28806), (9, 28809), (13, 28878), (18, 28920), (19, 28923), (22, 28947), (25, 28983), (26, 29001), (27, 29004), (35, 29061), (38, 29085), (40, 29118), (42, 29139), (50, 29205), (57, 29286), (62, 29322), (65, 29346), (71, 29385), (73, 29391), (75, 29460),

Gene: Conley_31 Start: 26684, Stop: 27535, Start Num: 1

Candidate Starts for Conley_31:

(Start: 1 @26684 has 58 MA's), (2, 26705), (7, 26873), (11, 26927), (12, 26930), (13, 26948), (14, 26951), (15, 26960), (18, 26990), (19, 26993), (20, 26996), (22, 27017), (23, 27026), (29, 27083), (37, 27152), (39, 27164), (40, 27188), (45, 27245), (46, 27248), (48, 27269), (50, 27275), (51, 27284), (52, 27302), (59, 27377), (61, 27389), (62, 27392), (66, 27422), (69, 27446), (71, 27455), (75, 27530),

Gene: Crocheter_33 Start: 28750, Stop: 29601, Start Num: 1

Candidate Starts for Crocheter_33:

(Start: 1 @28750 has 58 MA's), (2, 28771), (4, 28804), (5, 28852), (6, 28867), (9, 28945), (13, 29014), (18, 29056), (19, 29059), (22, 29083), (25, 29119), (26, 29137), (27, 29140), (31, 29170), (39, 29230), (40, 29254), (42, 29275), (47, 29320), (62, 29458), (65, 29482), (71, 29521), (73, 29527), (75, 29596),

Gene: Dancer_30 Start: 25340, Stop: 26194, Start Num: 1

Candidate Starts for Dancer_30:

(Start: 1 @25340 has 58 MA's), (2, 25361), (7, 25529), (11, 25583), (12, 25586), (14, 25607), (18, 25646), (19, 25649), (20, 25652), (22, 25673), (40, 25847), (43, 25877), (45, 25904), (46, 25907), (48, 25928), (52, 25961), (61, 26048), (62, 26051), (66, 26081), (71, 26114),

Gene: Demure_32 Start: 27716, Stop: 28567, Start Num: 1

Candidate Starts for Demure_32:

(Start: 1 @27716 has 58 MA's), (2, 27737), (4, 27770), (5, 27818), (6, 27833), (9, 27911), (13, 27980), (18, 28022), (19, 28025), (22, 28049), (23, 28058), (25, 28085), (30, 28118), (31, 28136), (35, 28163), (39, 28196), (40, 28220), (42, 28241), (50, 28307), (62, 28424), (64, 28439), (71, 28487), (73, 28493), (75, 28562),

Gene: Dialga_34 Start: 28772, Stop: 29623, Start Num: 1

Candidate Starts for Dialga_34:

(Start: 1 @28772 has 58 MA's), (2, 28793), (4, 28826), (5, 28874), (6, 28889), (9, 28967), (13, 29036), (18, 29078), (19, 29081), (22, 29105), (23, 29114), (25, 29141), (30, 29174), (31, 29192), (35, 29219), (39, 29252), (40, 29276), (42, 29297), (50, 29363), (62, 29480), (64, 29495), (71, 29543), (73, 29549), (75, 29618),

Gene: Duffington_33 Start: 28598, Stop: 29449, Start Num: 1

Candidate Starts for Duffington_33:

(Start: 1 @28598 has 58 MA's), (2, 28619), (4, 28652), (5, 28700), (6, 28715), (9, 28793), (13, 28862), (18, 28904), (19, 28907), (22, 28931), (25, 28967), (26, 28985), (27, 28988), (36, 29060), (38, 29069), (40, 29102), (41, 29117), (42, 29123), (62, 29306), (65, 29330), (71, 29369), (73, 29375), (75, 29444),

Gene: Eddiemania_34 Start: 29259, Stop: 30110, Start Num: 1

Candidate Starts for Eddiemania_34:

(Start: 1 @29259 has 58 MA's), (2, 29280), (4, 29313), (5, 29361), (6, 29376), (9, 29454), (13, 29523), (17, 29553), (18, 29565), (19, 29568), (22, 29592), (25, 29628), (26, 29646), (27, 29649), (29, 29658), (39, 29739), (40, 29763), (42, 29784), (47, 29829), (62, 29967), (65, 29991), (71, 30030), (73, 30036), (75, 30105),

Gene: EndAve_33 Start: 28610, Stop: 29461, Start Num: 1

Candidate Starts for EndAve_33:

(Start: 1 @28610 has 58 MA's), (2, 28631), (4, 28664), (5, 28712), (6, 28727), (8, 28802), (9, 28805), (13, 28874), (18, 28916), (19, 28919), (22, 28943), (25, 28979), (26, 28997), (27, 29000), (30, 29012), (35, 29057), (38, 29081), (40, 29114), (42, 29135), (50, 29201), (57, 29282), (62, 29318), (65, 29342), (71, 29381), (73, 29387), (75, 29456),

Gene: Fazel_31 Start: 27635, Stop: 28486, Start Num: 1

Candidate Starts for Fazel_31:

(Start: 1 @27635 has 58 MA's), (2, 27656), (6, 27752), (10, 27842), (14, 27902), (15, 27911), (17, 27929), (18, 27941), (19, 27944), (24, 27992), (25, 28004), (27, 28025), (31, 28055), (40, 28139), (42, 28160), (54, 28259), (59, 28328), (62, 28343), (64, 28358), (66, 28373), (72, 28409), (75, 28481),

Gene: Figliar_33 Start: 28608, Stop: 29459, Start Num: 1

Candidate Starts for Figliar_33:

(Start: 1 @28608 has 58 MA's), (2, 28629), (4, 28662), (5, 28710), (6, 28725), (13, 28872), (18, 28914), (19, 28917), (22, 28941), (25, 28977), (26, 28995), (27, 28998), (31, 29028), (38, 29079), (40, 29112), (41, 29127), (42, 29133), (62, 29316), (65, 29340), (71, 29379), (73, 29385), (74, 29424), (75, 29454),

Gene: Football_31 Start: 25352, Stop: 26206, Start Num: 1

Candidate Starts for Football_31:

(Start: 1 @25352 has 58 MA's), (2, 25373), (7, 25541), (11, 25595), (12, 25598), (14, 25619), (18, 25658), (19, 25661), (20, 25664), (22, 25685), (40, 25859), (43, 25889), (45, 25916), (46, 25919), (48, 25940), (52, 25973), (61, 26060), (62, 26063), (66, 26093), (71, 26126),

Gene: FortCran_30 Start: 25604, Stop: 26458, Start Num: 1

Candidate Starts for FortCran_30:

(Start: 1 @25604 has 58 MA's), (2, 25625), (7, 25793), (11, 25847), (12, 25850), (13, 25868), (14, 25871), (18, 25910), (19, 25913), (20, 25916), (22, 25937), (23, 25946), (32, 26039), (40, 26111), (43, 26141), (45, 26168), (46, 26171), (48, 26192), (52, 26225), (55, 26246), (56, 26249), (61, 26312), (62, 26315), (66, 26345), (71, 26378),

Gene: Gill_30 Start: 25727, Stop: 26581, Start Num: 1

Candidate Starts for Gill_30:

(Start: 1 @25727 has 58 MA's), (2, 25748), (7, 25916), (11, 25970), (12, 25973), (13, 25991), (14, 25994), (18, 26033), (19, 26036), (20, 26039), (22, 26060), (23, 26069), (39, 26210), (40, 26234), (43, 26264), (45, 26291), (46, 26294), (48, 26315), (52, 26348), (56, 26372), (61, 26435), (62, 26438), (66, 26468), (71, 26501),

Gene: Glintora_33 Start: 28557, Stop: 29408, Start Num: 1

Candidate Starts for Glintora_33:

(Start: 1 @28557 has 58 MA's), (2, 28578), (4, 28611), (5, 28659), (6, 28674), (8, 28749), (9, 28752), (13, 28821), (18, 28863), (19, 28866), (22, 28890), (25, 28926), (26, 28944), (27, 28947), (31, 28977), (35, 29004), (39, 29037), (40, 29061), (42, 29082), (57, 29229), (62, 29265), (65, 29289), (71, 29328), (73, 29334), (75, 29403),

Gene: Gravy_30 Start: 25727, Stop: 26581, Start Num: 1

Candidate Starts for Gravy_30:

(Start: 1 @25727 has 58 MA's), (2, 25748), (7, 25916), (11, 25970), (12, 25973), (13, 25991), (14, 25994), (18, 26033), (19, 26036), (20, 26039), (22, 26060), (23, 26069), (39, 26210), (40, 26234), (43, 26264), (45, 26291), (46, 26294), (48, 26315), (52, 26348), (56, 26372), (59, 26423), (61, 26435), (62, 26438), (66, 26468), (71, 26501),

Gene: Gusicorn_33 Start: 28397, Stop: 29248, Start Num: 1

Candidate Starts for Gusicorn_33:

(Start: 1 @28397 has 58 MA's), (2, 28418), (4, 28451), (5, 28499), (6, 28514), (9, 28592), (13, 28661), (18, 28703), (19, 28706), (22, 28730), (26, 28784), (27, 28787), (35, 28844), (39, 28877), (40, 28901), (42, 28922), (50, 28988), (57, 29069), (61, 29102), (62, 29105), (65, 29129), (71, 29168), (73, 29174), (75, 29243),

Gene: Hortihabitatio_33 Start: 28027, Stop: 28878, Start Num: 1

Candidate Starts for Hortihabitatio_33:

(Start: 1 @28027 has 58 MA's), (2, 28048), (6, 28144), (10, 28234), (14, 28294), (17, 28321), (18, 28333), (19, 28336), (24, 28384), (25, 28396), (27, 28417), (31, 28447), (39, 28507), (40, 28531), (42, 28552), (53, 28648), (62, 28735), (66, 28765), (71, 28798), (73, 28804), (75, 28873),

Gene: Hydrus_34 Start: 29125, Stop: 29976, Start Num: 1

Candidate Starts for Hydrus_34:

(Start: 1 @29125 has 58 MA's), (2, 29146), (4, 29179), (5, 29227), (6, 29242), (9, 29320), (13, 29389), (18, 29431), (19, 29434), (22, 29458), (25, 29494), (26, 29512), (27, 29515), (31, 29545), (39, 29605), (40, 29629), (42, 29650), (47, 29695), (62, 29833), (65, 29857), (71, 29896), (73, 29902), (75, 29971),

Gene: Jodelie19_34 Start: 30047, Stop: 30898, Start Num: 1

Candidate Starts for Jodelie19_34:

(Start: 1 @30047 has 58 MA's), (2, 30068), (4, 30101), (5, 30149), (6, 30164), (9, 30242), (13, 30311), (18, 30353), (19, 30356), (22, 30380), (25, 30416), (26, 30434), (27, 30437), (36, 30509), (38, 30518), (40, 30551), (41, 30566), (42, 30572), (62, 30755), (65, 30779), (71, 30818), (73, 30824), (74, 30863), (75, 30893),

Gene: JulesRay_30 Start: 25634, Stop: 26488, Start Num: 1

Candidate Starts for JulesRay_30:

(Start: 1 @25634 has 58 MA's), (2, 25655), (7, 25823), (11, 25877), (12, 25880), (14, 25901), (18, 25940), (19, 25943), (20, 25946), (22, 25967), (40, 26141), (43, 26171), (45, 26198), (46, 26201), (48, 26222), (52, 26255), (61, 26342), (62, 26345), (66, 26375), (71, 26408),

Gene: Kenosha_33 Start: 29160, Stop: 30011, Start Num: 1

Candidate Starts for Kenosha_33:

(Start: 1 @29160 has 58 MA's), (2, 29181), (4, 29214), (5, 29262), (6, 29277), (9, 29355), (13, 29424), (18, 29466), (19, 29469), (22, 29493), (25, 29529), (26, 29547), (27, 29550), (31, 29580), (39, 29640), (40, 29664), (42, 29685), (47, 29730), (62, 29868), (65, 29892), (71, 29931), (73, 29937), (75, 30006),

Gene: Kerry_30 Start: 25727, Stop: 26581, Start Num: 1

Candidate Starts for Kerry_30:

(Start: 1 @25727 has 58 MA's), (2, 25748), (7, 25916), (11, 25970), (12, 25973), (13, 25991), (14, 25994), (18, 26033), (19, 26036), (20, 26039), (22, 26060), (23, 26069), (39, 26210), (40, 26234), (43, 26264), (45, 26291), (46, 26294), (48, 26315), (52, 26348), (56, 26372), (59, 26423), (61, 26435), (62, 26438), (66, 26468), (71, 26501),

Gene: Luthien_34 Start: 28608, Stop: 29459, Start Num: 1

Candidate Starts for Luthien_34:

(Start: 1 @28608 has 58 MA's), (2, 28629), (4, 28662), (5, 28710), (6, 28725), (8, 28800), (9, 28803), (13, 28872), (18, 28914), (19, 28917), (22, 28941), (25, 28977), (26, 28995), (27, 28998), (35, 29055), (38, 29079), (40, 29112), (42, 29133), (50, 29199), (57, 29280), (62, 29316), (65, 29340), (71, 29379), (72, 29382), (73, 29385), (75, 29454),

Gene: Madvan_33 Start: 28392, Stop: 29243, Start Num: 1

Candidate Starts for Madvan_33:

(Start: 1 @28392 has 58 MA's), (2, 28413), (4, 28446), (5, 28494), (6, 28509), (9, 28587), (13, 28656), (18, 28698), (19, 28701), (22, 28725), (25, 28761), (26, 28779), (27, 28782), (31, 28812), (39, 28872), (40, 28896), (42, 28917), (47, 28962), (62, 29100), (65, 29124), (73, 29169), (75, 29238),

Gene: Magel_31 Start: 25635, Stop: 26489, Start Num: 1

Candidate Starts for Magel_31:

(Start: 1 @25635 has 58 MA's), (2, 25656), (7, 25824), (11, 25878), (12, 25881), (13, 25899), (14, 25902), (18, 25941), (19, 25944), (20, 25947), (22, 25968), (23, 25977), (39, 26118), (40, 26142), (43, 26172), (45, 26199), (46, 26202), (48, 26223), (52, 26256), (56, 26280), (59, 26331), (61, 26343), (62, 26346), (66, 26376), (71, 26409),

Gene: MajinBuu_33 Start: 28618, Stop: 29469, Start Num: 1

Candidate Starts for MajinBuu_33:

(Start: 1 @28618 has 58 MA's), (2, 28639), (4, 28672), (5, 28720), (6, 28735), (9, 28813), (13, 28882), (18, 28924), (19, 28927), (22, 28951), (25, 28987), (26, 29005), (27, 29008), (31, 29038), (38, 29089), (40, 29122), (41, 29137), (42, 29143), (62, 29326), (65, 29350), (71, 29389), (73, 29395), (74, 29434), (75, 29464),

Gene: Mossy_34 Start: 29805, Stop: 30656, Start Num: 1

Candidate Starts for Mossy_34:

(Start: 1 @29805 has 58 MA's), (2, 29826), (4, 29859), (6, 29922), (10, 30012), (14, 30072), (17, 30099), (19, 30114), (24, 30162), (25, 30174), (27, 30195), (31, 30225), (40, 30309), (42, 30330), (53, 30426), (59, 30498), (62, 30513), (66, 30543), (71, 30576), (73, 30582), (75, 30651),

Gene: Mysticmoon_32 Start: 28426, Stop: 29277, Start Num: 1

Candidate Starts for Mysticmoon_32:

(Start: 1 @28426 has 58 MA's), (2, 28447), (4, 28480), (6, 28543), (10, 28633), (14, 28693), (17, 28720), (19, 28735), (24, 28783), (25, 28795), (27, 28816), (31, 28846), (40, 28930), (42, 28951), (54, 29050), (59, 29119), (63, 29143), (64, 29149), (66, 29164), (72, 29200), (73, 29203), (75, 29272),

Gene: Nadmeg_34 Start: 29823, Stop: 30674, Start Num: 1

Candidate Starts for Nadmeg_34:

(Start: 1 @29823 has 58 MA's), (2, 29844), (4, 29877), (5, 29925), (6, 29940), (9, 30018), (13, 30087), (18, 30129), (19, 30132), (22, 30156), (25, 30192), (26, 30210), (27, 30213), (31, 30243), (39, 30303), (40, 30327), (42, 30348), (47, 30393), (62, 30531), (65, 30555), (73, 30600), (75, 30669),

Gene: Nithya_33 Start: 28607, Stop: 29458, Start Num: 1

Candidate Starts for Nithya_33:

(Start: 1 @28607 has 58 MA's), (2, 28628), (4, 28661), (5, 28709), (6, 28724), (8, 28799), (9, 28802), (13, 28871), (18, 28913), (19, 28916), (22, 28940), (25, 28976), (26, 28994), (27, 28997), (35, 29054), (38, 29078), (40, 29111), (42, 29132), (50, 29198), (57, 29279), (62, 29315), (65, 29339), (71, 29378), (73, 29384), (75, 29453),

Gene: NoPickles_30 Start: 25359, Stop: 26213, Start Num: 1

Candidate Starts for NoPickles_30:

(Start: 1 @25359 has 58 MA's), (2, 25380), (7, 25548), (11, 25602), (12, 25605), (13, 25623), (14, 25626), (18, 25665), (19, 25668), (20, 25671), (22, 25692), (23, 25701), (39, 25842), (40, 25866), (43, 25896), (45, 25923), (46, 25926), (48, 25947), (52, 25980), (56, 26004), (59, 26055), (61, 26067), (62, 26070), (66, 26100), (71, 26133),

Gene: Odesza_30 Start: 25727, Stop: 26581, Start Num: 1

Candidate Starts for Odesza_30:

(Start: 1 @25727 has 58 MA's), (2, 25748), (7, 25916), (11, 25970), (12, 25973), (13, 25991), (14, 25994), (18, 26033), (19, 26036), (20, 26039), (22, 26060), (23, 26069), (39, 26210), (40, 26234), (43, 26264), (45, 26291), (46, 26294), (48, 26315), (52, 26348), (56, 26372), (61, 26435), (62, 26438), (66, 26468), (71, 26501),

Gene: OhMyWard_33 Start: 29145, Stop: 29996, Start Num: 1

Candidate Starts for OhMyWard_33:

(Start: 1 @29145 has 58 MA's), (2, 29166), (6, 29262), (10, 29352), (14, 29412), (17, 29439), (19, 29454), (24, 29502), (25, 29514), (27, 29535), (30, 29547), (31, 29565), (40, 29649), (42, 29670), (53, 29766), (59, 29838), (62, 29853), (66, 29883), (71, 29916), (73, 29922), (75, 29991),

Gene: OlgasClover_33 Start: 29331, Stop: 30182, Start Num: 1

Candidate Starts for OlgasClover_33:

(Start: 1 @29331 has 58 MA's), (2, 29352), (4, 29385), (5, 29433), (6, 29448), (9, 29526), (13, 29595), (18, 29637), (19, 29640), (22, 29664), (25, 29700), (26, 29718), (27, 29721), (31, 29751), (38, 29802), (40, 29835), (41, 29850), (42, 29856), (62, 30039), (65, 30063), (71, 30102), (73, 30108), (74, 30147), (75, 30177),

Gene: Pepy6_036 Start: 35866, Stop: 36693, Start Num: 1

Candidate Starts for Pepy6_036:

(Start: 1 @35866 has 58 MA's), (2, 35887), (14, 36133), (15, 36142), (17, 36160), (23, 36208), (48, 36451), (57, 36520), (58, 36526), (60, 36544), (61, 36553), (67, 36589), (68, 36592), (75, 36688),

Gene: Perkunas_32 Start: 26126, Stop: 26977, Start Num: 1

Candidate Starts for Perkunas_32:

(Start: 1 @26126 has 58 MA's), (2, 26147), (7, 26315), (11, 26369), (12, 26372), (13, 26390), (14, 26393), (15, 26402), (17, 26420), (18, 26432), (19, 26435), (20, 26438), (22, 26459), (23, 26468), (28, 26522), (29, 26525), (37, 26594), (39, 26606), (40, 26630), (46, 26690), (48, 26711), (50, 26717), (51, 26726), (52, 26744), (55, 26765), (61, 26831), (62, 26834), (71, 26897),

Gene: PerroGrande22_40 Start: 37219, Stop: 38046, Start Num: 1

Candidate Starts for PerroGrande22_40:

(Start: 1 @37219 has 58 MA's), (2, 37240), (14, 37486), (15, 37495), (23, 37561), (24, 37576), (26, 37606), (48, 37804), (57, 37873), (58, 37879), (60, 37897), (68, 37945), (70, 37969), (75, 38041),

Gene: PestoPenguin_36 Start: 28397, Stop: 29248, Start Num: 1

Candidate Starts for PestoPenguin_36:

(Start: 1 @28397 has 58 MA's), (2, 28418), (4, 28451), (5, 28499), (6, 28514), (9, 28592), (13, 28661), (18, 28703), (19, 28706), (22, 28730), (26, 28784), (27, 28787), (35, 28844), (39, 28877), (40, 28901), (42, 28922), (50, 28988), (57, 29069), (61, 29102), (62, 29105), (65, 29129), (71, 29168), (73, 29174), (75, 29243),

Gene: Petito_32 Start: 26881, Stop: 27741, Start Num: 1

Candidate Starts for Petito_32:

(Start: 1 @26881 has 58 MA's), (2, 26902), (7, 27070), (11, 27124), (12, 27127), (13, 27145), (14, 27148), (16, 27169), (18, 27187), (19, 27190), (20, 27193), (22, 27214), (55, 27529), (56, 27532), (62, 27598), (63, 27607), (75, 27736),

Gene: Phepper_33 Start: 28390, Stop: 29241, Start Num: 1

Candidate Starts for Phepper_33:

(Start: 1 @28390 has 58 MA's), (2, 28411), (4, 28444), (5, 28492), (6, 28507), (9, 28585), (13, 28654), (18, 28696), (19, 28699), (22, 28723), (25, 28759), (26, 28777), (27, 28780), (30, 28792), (31, 28810), (39, 28870), (40, 28894), (42, 28915), (47, 28960), (49, 28978), (62, 29098), (65, 29122), (71, 29161), (73, 29167), (75, 29236),

Gene: Pherobrine_32 Start: 28424, Stop: 29275, Start Num: 1

Candidate Starts for Pherobrine_32:

(Start: 1 @28424 has 58 MA's), (2, 28445), (4, 28478), (6, 28541), (10, 28631), (14, 28691), (17, 28718), (19, 28733), (24, 28781), (25, 28793), (27, 28814), (31, 28844), (40, 28928), (42, 28949), (54, 29048), (59, 29117), (63, 29141), (64, 29147), (66, 29162), (72, 29198), (75, 29270),

Gene: Poco6_037 Start: 37888, Stop: 38715, Start Num: 1

Candidate Starts for Poco6_037:

(Start: 1 @37888 has 58 MA's), (2, 37909), (15, 38164), (19, 38197), (23, 38230), (24, 38245), (26, 38275), (48, 38473), (57, 38542), (58, 38548), (68, 38614), (70, 38638), (75, 38710),

Gene: Rickmore_32 Start: 27041, Stop: 27892, Start Num: 1

Candidate Starts for Rickmore_32:

(Start: 1 @27041 has 58 MA's), (2, 27062), (3, 27086), (6, 27158), (16, 27329), (17, 27335), (18, 27347), (19, 27350), (21, 27362), (22, 27374), (25, 27410), (27, 27431), (30, 27443), (38, 27512), (39, 27521), (40, 27545), (47, 27611), (57, 27713), (59, 27734), (62, 27749), (72, 27815), (75, 27887),

Gene: Roney_30 Start: 25727, Stop: 26581, Start Num: 1

Candidate Starts for Roney_30:

(Start: 1 @25727 has 58 MA's), (2, 25748), (7, 25916), (11, 25970), (12, 25973), (13, 25991), (14, 25994), (18, 26033), (19, 26036), (20, 26039), (22, 26060), (23, 26069), (39, 26210), (40, 26234), (43, 26264), (45, 26291), (46, 26294), (48, 26315), (52, 26348), (56, 26372), (61, 26435), (62, 26438), (66, 26468), (71, 26501),

Gene: Runhaar_33 Start: 28393, Stop: 29244, Start Num: 1

Candidate Starts for Runhaar_33:

(Start: 1 @28393 has 58 MA's), (2, 28414), (4, 28447), (5, 28495), (6, 28510), (9, 28588), (13, 28657), (18, 28699), (19, 28702), (22, 28726), (25, 28762), (26, 28780), (27, 28783), (31, 28813), (39, 28873), (40, 28897), (42, 28918), (47, 28963), (62, 29101), (65, 29125), (71, 29164), (72, 29167), (73, 29170), (75, 29239),

Gene: Schwartz33_34 Start: 28724, Stop: 29578, Start Num: 1

Candidate Starts for Schwartz33_34:

(Start: 1 @28724 has 58 MA's), (2, 28745), (6, 28841), (10, 28931), (11, 28967), (13, 28988), (16, 29012), (19, 29033), (22, 29057), (26, 29111), (27, 29114), (28, 29120), (31, 29144), (34, 29168), (44, 29267), (53, 29345), (55, 29363), (57, 29396), (62, 29432), (64, 29447), (66, 29462), (75, 29573),

Gene: Secretariat_31 Start: 27455, Stop: 28309, Start Num: 1

Candidate Starts for Secretariat_31:

(Start: 1 @27455 has 58 MA's), (2, 27476), (10, 27662), (11, 27698), (12, 27701), (13, 27719), (18, 27761), (19, 27764), (21, 27776), (22, 27788), (29, 27854), (31, 27875), (38, 27926), (50, 28046), (53, 28076), (55, 28094), (68, 28199), (75, 28304),

Gene: ShaggyRogers_33 Start: 28396, Stop: 29247, Start Num: 1

Candidate Starts for ShaggyRogers_33:

(Start: 1 @28396 has 58 MA's), (2, 28417), (4, 28450), (5, 28498), (6, 28513), (9, 28591), (13, 28660), (18, 28702), (19, 28705), (22, 28729), (26, 28783), (27, 28786), (35, 28843), (39, 28876), (40, 28900), (42, 28921), (50, 28987), (57, 29068), (61, 29101), (62, 29104), (65, 29128), (71, 29167), (73, 29173), (74, 29212), (75, 29242),

Gene: SweetCrkHerbs_32 Start: 25799, Stop: 26650, Start Num: 1

Candidate Starts for SweetCrkHerbs_32:

(Start: 1 @25799 has 58 MA's), (2, 25820), (7, 25988), (11, 26042), (12, 26045), (13, 26063), (14, 26066), (15, 26075), (17, 26093), (18, 26105), (19, 26108), (20, 26111), (22, 26132), (23, 26141), (28, 26195), (29, 26198), (37, 26267), (39, 26279), (40, 26303), (46, 26363), (48, 26384), (50, 26390), (51, 26399), (52, 26417), (55, 26438), (61, 26504), (62, 26507), (71, 26570),

Gene: Tairn4Wing_32 Start: 25632, Stop: 26486, Start Num: 1

Candidate Starts for Tairn4Wing_32:

(Start: 1 @25632 has 58 MA's), (2, 25653), (7, 25821), (11, 25875), (12, 25878), (13, 25896), (14, 25899), (18, 25938), (19, 25941), (20, 25944), (22, 25965), (23, 25974), (40, 26139), (43, 26169), (45, 26196), (46, 26199), (48, 26220), (52, 26253), (55, 26274), (56, 26277), (61, 26340), (62, 26343), (66, 26373), (71, 26406),

Gene: Talon44_31 Start: 25799, Stop: 26650, Start Num: 1

Candidate Starts for Talon44_31:

(Start: 1 @25799 has 58 MA's), (2, 25820), (7, 25988), (11, 26042), (12, 26045), (13, 26063), (14, 26066), (15, 26075), (17, 26093), (18, 26105), (19, 26108), (20, 26111), (22, 26132), (23, 26141), (28, 26195), (29, 26198), (37, 26267), (39, 26279), (40, 26303), (46, 26363), (48, 26384), (50, 26390), (51, 26399), (52, 26417), (55, 26438), (61, 26504), (62, 26507), (71, 26570),

Gene: Tanis_30 Start: 25577, Stop: 26431, Start Num: 1

Candidate Starts for Tanis_30:

(Start: 1 @25577 has 58 MA's), (2, 25598), (7, 25766), (11, 25820), (12, 25823), (13, 25841), (14, 25844), (18, 25883), (19, 25886), (20, 25889), (22, 25910), (23, 25919), (39, 26060), (40, 26084), (43, 26114), (45, 26141), (46, 26144), (48, 26165), (52, 26198), (56, 26222), (59, 26273), (61, 26285), (62,

26288), (66, 26318), (71, 26351),

Gene: TenaciousP_34 Start: 30047, Stop: 30898, Start Num: 1

Candidate Starts for TenaciousP_34:

(Start: 1 @30047 has 58 MA's), (2, 30068), (4, 30101), (5, 30149), (6, 30164), (9, 30242), (13, 30311), (18, 30353), (19, 30356), (22, 30380), (25, 30416), (26, 30434), (27, 30437), (31, 30467), (38, 30518), (40, 30551), (41, 30566), (42, 30572), (62, 30755), (65, 30779), (71, 30818), (73, 30824), (74, 30863), (75, 30893),

Gene: Tonaltzin_35 Start: 28617, Stop: 29468, Start Num: 1

Candidate Starts for Tonaltzin_35:

(Start: 1 @28617 has 58 MA's), (2, 28638), (4, 28671), (5, 28719), (6, 28734), (9, 28812), (13, 28881), (18, 28923), (19, 28926), (22, 28950), (25, 28986), (26, 29004), (27, 29007), (31, 29037), (38, 29088), (40, 29121), (41, 29136), (42, 29142), (62, 29325), (65, 29349), (71, 29388), (73, 29394), (74, 29433), (75, 29463),

Gene: Trufflozitus_30 Start: 25633, Stop: 26487, Start Num: 1

Candidate Starts for Trufflozitus_30:

(Start: 1 @25633 has 58 MA's), (2, 25654), (7, 25822), (11, 25876), (12, 25879), (13, 25897), (14, 25900), (18, 25939), (19, 25942), (20, 25945), (22, 25966), (23, 25975), (33, 26074), (40, 26140), (43, 26170), (45, 26197), (46, 26200), (48, 26221), (52, 26254), (55, 26275), (56, 26278), (61, 26341), (62, 26344), (66, 26374), (71, 26407),

Gene: Untouchable_33 Start: 28749, Stop: 29600, Start Num: 1

Candidate Starts for Untouchable_33:

(Start: 1 @28749 has 58 MA's), (2, 28770), (4, 28803), (5, 28851), (6, 28866), (9, 28944), (13, 29013), (18, 29055), (19, 29058), (22, 29082), (25, 29118), (26, 29136), (27, 29139), (31, 29169), (39, 29229), (40, 29253), (42, 29274), (47, 29319), (62, 29457), (65, 29481), (73, 29526), (75, 29595),

Gene: Vardy_33 Start: 28358, Stop: 29209, Start Num: 1

Candidate Starts for Vardy_33:

(Start: 1 @28358 has 58 MA's), (2, 28379), (4, 28412), (5, 28460), (6, 28475), (9, 28553), (13, 28622), (18, 28664), (19, 28667), (22, 28691), (25, 28727), (26, 28745), (27, 28748), (31, 28778), (39, 28838), (40, 28862), (42, 28883), (47, 28928), (62, 29066), (65, 29090), (71, 29129), (72, 29132), (73, 29135), (75, 29204),

Gene: Zeph_34 Start: 29107, Stop: 29958, Start Num: 1

Candidate Starts for Zeph_34:

(Start: 1 @29107 has 58 MA's), (2, 29128), (4, 29161), (5, 29209), (6, 29224), (9, 29302), (13, 29371), (18, 29413), (19, 29416), (22, 29440), (25, 29476), (26, 29494), (27, 29497), (31, 29527), (39, 29587), (40, 29611), (42, 29632), (47, 29677), (62, 29815), (65, 29839), (71, 29878), (73, 29884), (75, 29953),