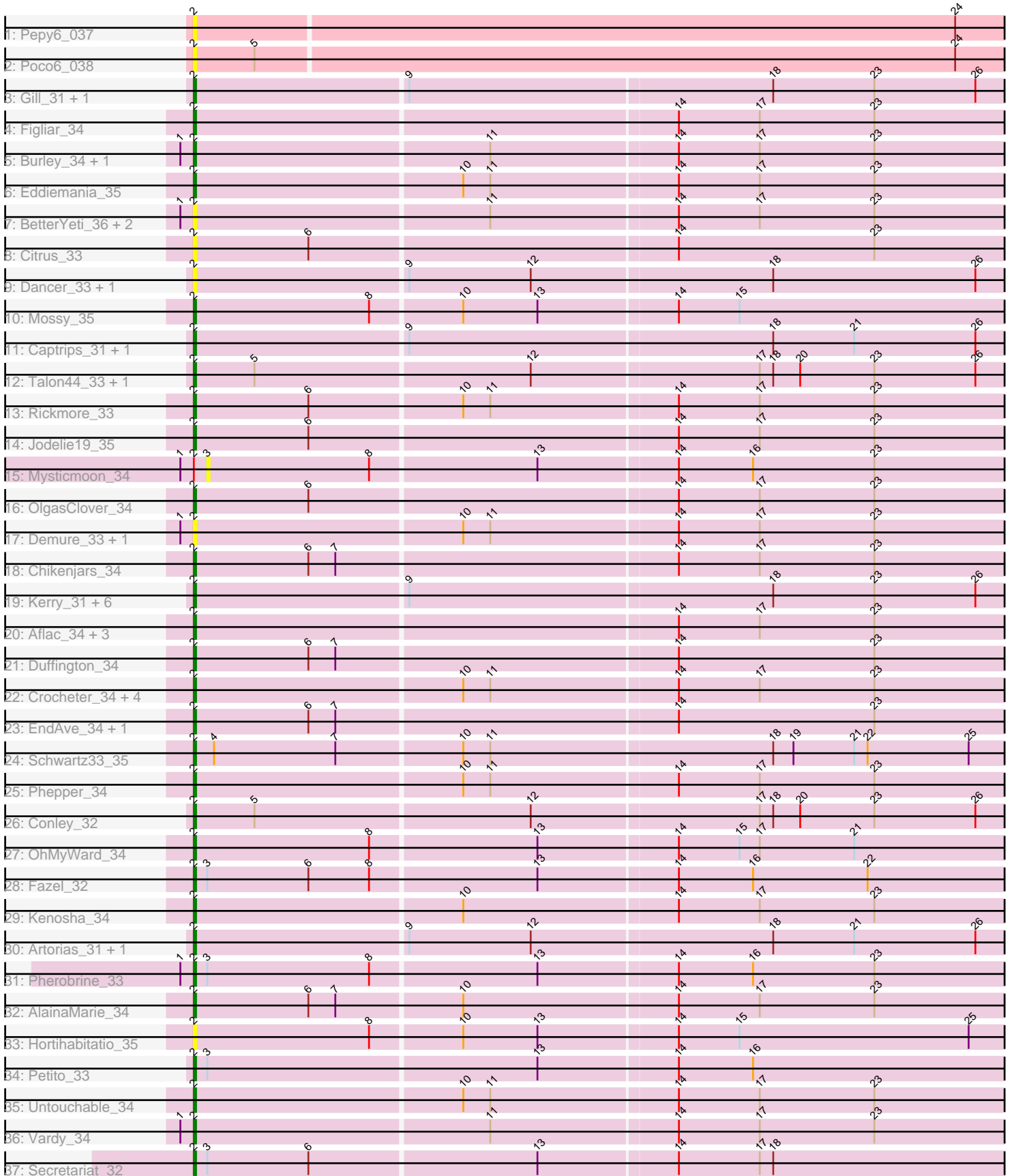


Zoomed Pham 202953



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 202953 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202953 has 60 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Pepy6_037
- Track 2 : Poco6_038
- Track 3 : Gill_31, Roney_31
- Track 4 : Figliar_34
- Track 5 : Burley_34, Runhaar_34
- Track 6 : Eddiemania_35
- Track 7 : BetterYeti_36, ShaggyRogers_37, Gusicorn_37
- Track 8 : Citrus_33
- Track 9 : Dancer_33, JulesRay_33
- Track 10 : Mossy_35
- Track 11 : Captrips_31, Avazak_31
- Track 12 : Talon44_33, Perkunas_33
- Track 13 : Rickmore_33
- Track 14 : Jodelie19_35
- Track 15 : Mysticmoon_34
- Track 16 : OlgasClover_34
- Track 17 : Demure_33, Arataki_32
- Track 18 : Chikenjars_34
- Track 19 : Kerry_31, Tanis_31, Capybara_31, NoPickles_31, Gravy_31, Magel_32, Odesza_31
- Track 20 : Aflac_34, TenaciousP_35, BluerMoon_37, MajinBuu_35
- Track 21 : Duffington_34
- Track 22 : Crocheter_34, Hydrus_35, Madvan_34, Nadmeg_35, Zeph_35
- Track 23 : EndAve_34, Nithya_34
- Track 24 : Schwartz33_35
- Track 25 : Phepper_34
- Track 26 : Conley_32
- Track 27 : OhMyWard_34
- Track 28 : Fazel_32
- Track 29 : Kenosha_34
- Track 30 : Artorias_31, FortCran_31
- Track 31 : Pherobrine_33
- Track 32 : AlainaMarie_34
- Track 33 : Hortihabitatio_35
- Track 34 : Petite_33
- Track 35 : Untouchable_34
- Track 36 : Vardy_34

- Track 37 : Secretariat_32

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

The start number called the most often in the published annotations is 2, it was called in 44 of the 44 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac_34, AlainaMarie_34, Arataki_32, Artorias_31, Avazak_31, BetterYeti_36, BluerMoon_37, Burley_34, Captrips_31, Copybara_31, Chikenjars_34, Citrus_33, Conley_32, Crocheter_34, Dancer_33, Demure_33, Duffington_34, Eddiemania_35, EndAve_34, Fazel_32, Figliar_34, FortCran_31, Gill_31, Gravy_31, Gusicorn_37, Hortihabitatio_35, Hydrus_35, Jodelie19_35, JulesRay_33, Kenosha_34, Kerry_31, Madvan_34, Magel_32, MajinBuu_35, Mossy_35, Nadmeg_35, Nithya_34, NoPickles_31, Odesza_31, OhMyWard_34, OlgasClover_34, Pepy6_037, Perkunas_33, Petite_33, Phepper_34, Pherobrine_33, Poco6_038, Rickmore_33, Roney_31, Runhaar_34, Schwartz33_35, Secretariat_32, ShaggyRogers_37, Talon44_33, Tanis_31, TenaciousP_35, Untouchable_34, Vardy_34, Zeph_35,

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

- Mysticmoon_34,

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

-

Summary by start number:

Start 2:

- Found in 60 of 60 (100.0%) of genes in pham
- Manual Annotations of this start: 44 of 44
- Called 98.3% of time when present
- Phage (with cluster) where this start called: Aflac_34 (DJ), AlainaMarie_34 (DJ), Arataki_32 (DJ), Artorias_31 (DJ), Avazak_31 (DJ), BetterYeti_36 (DJ), BluerMoon_37 (DJ), Burley_34 (DJ), Captrips_31 (DJ), Copybara_31 (DJ), Chikenjars_34 (DJ), Citrus_33 (DJ), Conley_32 (DJ), Crocheter_34 (DJ), Dancer_33 (DJ), Demure_33 (DJ), Duffington_34 (DJ), Eddiemania_35 (DJ), EndAve_34 (DJ), Fazel_32 (DJ), Figliar_34 (DJ), FortCran_31 (DJ), Gill_31 (DJ), Gravy_31 (DJ), Gusicorn_37 (DJ), Hortihabitatio_35 (DJ), Hydrus_35 (DJ), Jodelie19_35 (DJ), JulesRay_33 (DJ), Kenosha_34 (DJ), Kerry_31 (DJ), Madvan_34 (DJ), Magel_32 (DJ), MajinBuu_35 (DJ), Mossy_35 (DJ), Nadmeg_35 (DJ), Nithya_34 (DJ), NoPickles_31 (DJ), Odesza_31 (DJ), OhMyWard_34 (DJ), OlgasClover_34 (DJ), Pepy6_037 (CC), Perkunas_33 (DJ), Petite_33 (DJ), Phepper_34 (DJ), Pherobrine_33 (DJ), Poco6_038 (CC), Rickmore_33 (DJ), Roney_31 (DJ), Runhaar_34 (DJ), Schwartz33_35 (DJ), Secretariat_32 (DJ), ShaggyRogers_37 (DJ), Talon44_33 (DJ), Tanis_31 (DJ), TenaciousP_35 (DJ), Untouchable_34 (DJ), Vardy_34 (DJ), Zeph_35 (DJ),

Start 3:

- Found in 5 of 60 (8.3%) of genes in pham
- No Manual Annotations of this start.

- Called 20.0% of time when present
- Phage (with cluster) where this start called: Mysticmoon_34 (DJ),

Summary by clusters:

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

Info for manual annotations of cluster DJ:

- Start number 2 was manually annotated 44 times for cluster DJ.

Gene Information:

Gene: Aflac_34 Start: 29477, Stop: 30910, Start Num: 2

Candidate Starts for Aflac_34:

(Start: 2 @29477 has 44 MA's), (14, 29687), (17, 29723), (23, 29774), (29, 29855), (30, 29918), (32, 29927), (33, 29948), (35, 29960), (38, 30032), (40, 30044), (56, 30284), (57, 30293), (58, 30311), (61, 30335), (64, 30404), (77, 30578), (78, 30605), (81, 30623), (85, 30698), (90, 30767), (91, 30770), (94, 30803), (96, 30863),

Gene: AlainaMarie_34 Start: 29461, Stop: 30894, Start Num: 2

Candidate Starts for AlainaMarie_34:

(Start: 2 @29461 has 44 MA's), (6, 29512), (7, 29524), (10, 29578), (14, 29671), (17, 29707), (23, 29758), (29, 29839), (30, 29902), (32, 29911), (33, 29932), (35, 29944), (38, 30016), (56, 30268), (57, 30277), (58, 30295), (61, 30319), (64, 30388), (77, 30562), (78, 30589), (81, 30607), (85, 30682), (90, 30751), (91, 30754), (94, 30787),

Gene: Arataki_32 Start: 28570, Stop: 30003, Start Num: 2

Candidate Starts for Arataki_32:

(1, 28564), (Start: 2 @28570 has 44 MA's), (10, 28687), (11, 28699), (14, 28780), (17, 28816), (23, 28867), (29, 28948), (30, 29011), (33, 29041), (35, 29053), (38, 29125), (39, 29131), (40, 29137), (52, 29329), (56, 29377), (57, 29386), (61, 29428), (64, 29497), (68, 29560), (69, 29563), (77, 29671), (78, 29698), (81, 29716), (85, 29791), (90, 29860), (91, 29863), (92, 29866), (94, 29896), (96, 29956),

Gene: Artorias_31 Start: 26462, Stop: 27889, Start Num: 2

Candidate Starts for Artorias_31:

(Start: 2 @26462 has 44 MA's), (9, 26555), (12, 26609), (18, 26714), (21, 26750), (26, 26804), (30, 26903), (32, 26912), (35, 26945), (36, 26960), (38, 27017), (42, 27056), (47, 27140), (55, 27269), (57, 27281), (62, 27335), (64, 27392), (71, 27491), (77, 27566), (78, 27593), (84, 27680), (85, 27686), (86, 27689), (89, 27752), (90, 27755), (91, 27758), (92, 27761), (94, 27791), (98, 27863),

Gene: Avazak_31 Start: 26469, Stop: 27896, Start Num: 2

Candidate Starts for Avazak_31:

(Start: 2 @26469 has 44 MA's), (9, 26562), (18, 26721), (21, 26757), (26, 26811), (30, 26910), (32, 26919), (35, 26952), (36, 26967), (38, 27024), (42, 27063), (47, 27147), (55, 27276), (57, 27288), (62, 27342), (64, 27399), (71, 27498), (77, 27573), (78, 27600), (84, 27687), (85, 27693), (86, 27696), (89, 27759), (90, 27762), (91, 27765), (92, 27768), (94, 27798), (98, 27870),

Gene: BetterYeti_36 Start: 29251, Stop: 30684, Start Num: 2

Candidate Starts for BetterYeti_36:

(1, 29245), (Start: 2 @29251 has 44 MA's), (11, 29380), (14, 29461), (17, 29497), (23, 29548), (29, 29629), (30, 29692), (32, 29701), (33, 29722), (35, 29734), (38, 29806), (39, 29812), (40, 29818), (52, 30010), (56, 30058), (57, 30067), (61, 30109), (64, 30178), (66, 30199), (68, 30241), (69, 30244), (77, 30352), (78, 30379), (85, 30472), (90, 30541), (92, 30547), (94, 30577), (96, 30637),

Gene: BluerMoon_37 Start: 29474, Stop: 30907, Start Num: 2

Candidate Starts for BluerMoon_37:

(Start: 2 @29474 has 44 MA's), (14, 29684), (17, 29720), (23, 29771), (29, 29852), (30, 29915), (32, 29924), (33, 29945), (35, 29957), (38, 30029), (40, 30041), (56, 30281), (57, 30290), (58, 30308), (61, 30332), (64, 30401), (77, 30575), (78, 30602), (81, 30620), (85, 30695), (90, 30764), (91, 30767), (94, 30800), (96, 30860),

Gene: Burley_34 Start: 29212, Stop: 30645, Start Num: 2

Candidate Starts for Burley_34:

(1, 29206), (Start: 2 @29212 has 44 MA's), (11, 29341), (14, 29422), (17, 29458), (23, 29509), (29, 29590), (30, 29653), (32, 29662), (33, 29683), (35, 29695), (38, 29767), (39, 29773), (46, 29884), (47, 29887), (52, 29971), (55, 30016), (58, 30046), (61, 30070), (64, 30139), (75, 30304), (77, 30313), (78, 30340), (85, 30433), (90, 30502), (91, 30505), (92, 30508), (94, 30538),

Gene: Captrips_31 Start: 26498, Stop: 27925, Start Num: 2

Candidate Starts for Captrips_31:

(Start: 2 @26498 has 44 MA's), (9, 26591), (18, 26750), (21, 26786), (26, 26840), (30, 26939), (32, 26948), (35, 26981), (36, 26996), (38, 27053), (42, 27092), (47, 27176), (55, 27305), (57, 27317), (62, 27371), (64, 27428), (71, 27527), (77, 27602), (78, 27629), (84, 27716), (85, 27722), (86, 27725), (89, 27788), (90, 27791), (91, 27794), (92, 27797), (94, 27827), (98, 27899),

Gene: Capybara_31 Start: 26573, Stop: 28000, Start Num: 2

Candidate Starts for Capybara_31:

(Start: 2 @26573 has 44 MA's), (9, 26666), (18, 26825), (23, 26870), (26, 26915), (30, 27014), (32, 27023), (35, 27056), (36, 27071), (38, 27128), (42, 27167), (47, 27251), (55, 27380), (57, 27392), (59, 27416), (62, 27446), (77, 27677), (78, 27704), (82, 27749), (84, 27791), (85, 27797), (86, 27800), (89, 27863), (90, 27866), (91, 27869), (92, 27872), (94, 27902), (98, 27974),

Gene: Chikenjars_34 Start: 29464, Stop: 30897, Start Num: 2

Candidate Starts for Chikenjars_34:

(Start: 2 @29464 has 44 MA's), (6, 29515), (7, 29527), (14, 29674), (17, 29710), (23, 29761), (29, 29842), (30, 29905), (32, 29914), (33, 29935), (35, 29947), (38, 30019), (56, 30271), (57, 30280), (58, 30298), (61, 30322), (64, 30391), (77, 30565), (78, 30592), (81, 30610), (85, 30685), (90, 30754), (91, 30757), (94, 30790), (96, 30850),

Gene: Citrus_33 Start: 29468, Stop: 30901, Start Num: 2

Candidate Starts for Citrus_33:

(Start: 2 @29468 has 44 MA's), (6, 29519), (14, 29678), (23, 29765), (29, 29846), (30, 29909), (32, 29918), (33, 29939), (35, 29951), (38, 30023), (56, 30275), (57, 30284), (58, 30302), (61, 30326), (64, 30395), (77, 30569), (78, 30596), (81, 30614), (85, 30689), (90, 30758), (91, 30761), (94, 30794),

Gene: Conley_32 Start: 27539, Stop: 28963, Start Num: 2

Candidate Starts for Conley_32:

(Start: 2 @27539 has 44 MA's), (5, 27566), (12, 27686), (17, 27785), (18, 27791), (20, 27803), (23, 27836), (26, 27881), (32, 27989), (35, 28022), (38, 28094), (41, 28121), (42, 28133), (47, 28217), (49, 28241), (56, 28349), (62, 28412), (64, 28469), (67, 28514), (71, 28568), (77, 28643), (78, 28670), (82, 28715), (85, 28763), (86, 28766), (89, 28829), (90, 28832), (91, 28835), (94, 28868), (96, 28928),

Gene: Crocheter_34 Start: 29604, Stop: 31037, Start Num: 2

Candidate Starts for Crocheter_34:

(Start: 2 @29604 has 44 MA's), (10, 29721), (11, 29733), (14, 29814), (17, 29850), (23, 29901), (29, 29982), (30, 30045), (32, 30054), (33, 30075), (35, 30087), (38, 30159), (39, 30165), (46, 30276), (47, 30279), (55, 30408), (57, 30420), (61, 30462), (64, 30531), (66, 30552), (73, 30672), (77, 30705), (78, 30732), (81, 30750), (85, 30825), (90, 30894), (91, 30897), (92, 30900), (94, 30930), (96, 30990),

Gene: Dancer_33 Start: 26198, Stop: 27625, Start Num: 2

Candidate Starts for Dancer_33:

(Start: 2 @26198 has 44 MA's), (9, 26291), (12, 26345), (18, 26450), (26, 26540), (30, 26639), (35, 26681), (36, 26696), (37, 26747), (38, 26753), (42, 26792), (47, 26876), (55, 27005), (57, 27017), (62, 27071), (64, 27128), (71, 27227), (77, 27302), (78, 27329), (84, 27416), (85, 27422), (86, 27425), (89, 27488), (90, 27491), (91, 27494), (92, 27497), (94, 27527), (98, 27599),

Gene: Demure_33 Start: 28570, Stop: 30003, Start Num: 2

Candidate Starts for Demure_33:

(1, 28564), (Start: 2 @28570 has 44 MA's), (10, 28687), (11, 28699), (14, 28780), (17, 28816), (23, 28867), (29, 28948), (30, 29011), (33, 29041), (35, 29053), (38, 29125), (39, 29131), (40, 29137), (52, 29329), (56, 29377), (57, 29386), (61, 29428), (64, 29497), (68, 29560), (69, 29563), (77, 29671), (78, 29698), (81, 29716), (85, 29791), (90, 29860), (91, 29863), (92, 29866), (94, 29896), (96, 29956),

Gene: Duffington_34 Start: 29452, Stop: 30885, Start Num: 2

Candidate Starts for Duffington_34:

(Start: 2 @29452 has 44 MA's), (6, 29503), (7, 29515), (14, 29662), (23, 29749), (29, 29830), (30, 29893), (32, 29902), (33, 29923), (35, 29935), (38, 30007), (56, 30259), (57, 30268), (58, 30286), (61, 30310), (64, 30379), (77, 30553), (78, 30580), (81, 30598), (85, 30673), (87, 30697), (90, 30742), (91, 30745), (94, 30778), (96, 30838),

Gene: Eddiemania_35 Start: 30113, Stop: 31546, Start Num: 2

Candidate Starts for Eddiemania_35:

(Start: 2 @30113 has 44 MA's), (10, 30230), (11, 30242), (14, 30323), (17, 30359), (23, 30410), (29, 30491), (30, 30554), (32, 30563), (33, 30584), (35, 30596), (38, 30668), (39, 30674), (46, 30785), (47, 30788), (52, 30872), (55, 30917), (57, 30929), (61, 30971), (64, 31040), (66, 31061), (77, 31214), (78, 31241), (85, 31334), (90, 31403), (91, 31406), (92, 31409), (94, 31439),

Gene: EndAve_34 Start: 29464, Stop: 30897, Start Num: 2

Candidate Starts for EndAve_34:

(Start: 2 @29464 has 44 MA's), (6, 29515), (7, 29527), (14, 29674), (23, 29761), (29, 29842), (30, 29905), (32, 29914), (33, 29935), (35, 29947), (38, 30019), (56, 30271), (57, 30280), (58, 30298), (61, 30322), (64, 30391), (77, 30565), (78, 30592), (81, 30610), (85, 30685), (90, 30754), (91, 30757), (94, 30790),

Gene: Fazel_32 Start: 28489, Stop: 29928, Start Num: 2

Candidate Starts for Fazel_32:

(Start: 2 @28489 has 44 MA's), (3, 28495), (6, 28540), (8, 28567), (13, 28639), (14, 28699), (16, 28732), (22, 28783), (28, 28852), (30, 28930), (32, 28939), (34, 28969), (35, 28972), (38, 29044), (39, 29050), (45, 29152), (48, 29170), (50, 29212), (52, 29248), (57, 29305), (66, 29437), (67, 29461), (68, 29479), (69, 29482), (77, 29590), (78, 29617), (82, 29662), (85, 29710), (92, 29785), (93, 29803), (94, 29815), (96, 29875),

Gene: Figliar_34 Start: 29462, Stop: 30895, Start Num: 2

Candidate Starts for Figliar_34:

(Start: 2 @29462 has 44 MA's), (14, 29672), (17, 29708), (23, 29759), (29, 29840), (30, 29903), (32, 29912), (33, 29933), (35, 29945), (38, 30017), (40, 30029), (56, 30269), (57, 30278), (58, 30296), (61, 30320), (64, 30389), (66, 30410), (77, 30563), (78, 30590), (81, 30608), (85, 30683), (90, 30752), (91, 30755), (94, 30788), (96, 30848),

Gene: FortCran_31 Start: 26462, Stop: 27889, Start Num: 2

Candidate Starts for FortCran_31:

(Start: 2 @26462 has 44 MA's), (9, 26555), (12, 26609), (18, 26714), (21, 26750), (26, 26804), (30, 26903), (32, 26912), (35, 26945), (36, 26960), (38, 27017), (42, 27056), (47, 27140), (55, 27269), (57, 27281), (62, 27335), (64, 27392), (71, 27491), (77, 27566), (78, 27593), (84, 27680), (85, 27686), (86, 27689), (89, 27752), (90, 27755), (91, 27758), (92, 27761), (94, 27791), (98, 27863),

Gene: Gill_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Gill_31:

(Start: 2 @26585 has 44 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (47, 27263), (55, 27392), (57, 27404), (62, 27458), (77, 27689), (78, 27716), (82, 27761), (84, 27803), (85, 27809), (86, 27812), (89, 27875), (90, 27878), (91, 27881), (92, 27884), (94, 27914), (98, 27986),

Gene: Gravy_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Gravy_31:

(Start: 2 @26585 has 44 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (47, 27263), (55, 27392), (57, 27404), (59, 27428), (62, 27458), (77, 27689), (78, 27716), (82, 27761), (84, 27803), (85, 27809), (86, 27812), (89, 27875), (90, 27878), (91, 27881), (92, 27884), (94, 27914), (98, 27986),

Gene: Gusicorn_37 Start: 29251, Stop: 30684, Start Num: 2

Candidate Starts for Gusicorn_37:

(1, 29245), (Start: 2 @29251 has 44 MA's), (11, 29380), (14, 29461), (17, 29497), (23, 29548), (29, 29629), (30, 29692), (32, 29701), (33, 29722), (35, 29734), (38, 29806), (39, 29812), (40, 29818), (52, 30010), (56, 30058), (57, 30067), (61, 30109), (64, 30178), (66, 30199), (68, 30241), (69, 30244), (77, 30352), (78, 30379), (85, 30472), (90, 30541), (92, 30547), (94, 30577), (96, 30637),

Gene: Hortihabitatio_35 Start: 28881, Stop: 30320, Start Num: 2

Candidate Starts for Hortihabitatio_35:

(Start: 2 @28881 has 44 MA's), (8, 28959), (10, 28998), (13, 29031), (14, 29091), (15, 29118), (25, 29220), (28, 29244), (30, 29322), (32, 29331), (36, 29379), (37, 29430), (38, 29436), (45, 29544), (48, 29562), (50, 29604), (52, 29640), (57, 29697), (64, 29808), (67, 29853), (68, 29871), (69, 29874), (77, 29982), (78, 30009), (85, 30102), (92, 30177), (93, 30195), (94, 30207), (96, 30267),

Gene: Hydrus_35 Start: 29979, Stop: 31412, Start Num: 2

Candidate Starts for Hydrus_35:

(Start: 2 @29979 has 44 MA's), (10, 30096), (11, 30108), (14, 30189), (17, 30225), (23, 30276), (29, 30357), (30, 30420), (32, 30429), (33, 30450), (35, 30462), (38, 30534), (39, 30540), (46, 30651), (47, 30654), (55, 30783), (57, 30795), (61, 30837), (64, 30906), (66, 30927), (73, 31047), (77, 31080), (78, 31107), (81, 31125), (85, 31200), (90, 31269), (91, 31272), (92, 31275), (94, 31305), (96, 31365),

Gene: Jodelie19_35 Start: 30901, Stop: 32334, Start Num: 2

Candidate Starts for Jodelie19_35:

(Start: 2 @30901 has 44 MA's), (6, 30952), (14, 31111), (17, 31147), (23, 31198), (29, 31279), (30, 31342), (32, 31351), (33, 31372), (35, 31384), (38, 31456), (40, 31468), (56, 31708), (57, 31717), (58, 31735), (61, 31759), (64, 31828), (77, 32002), (78, 32029), (85, 32122), (90, 32191), (91, 32194), (94, 32227), (96, 32287),

Gene: JulesRay_33 Start: 26492, Stop: 27919, Start Num: 2

Candidate Starts for JulesRay_33:

(Start: 2 @26492 has 44 MA's), (9, 26585), (12, 26639), (18, 26744), (26, 26834), (30, 26933), (35, 26975), (36, 26990), (37, 27041), (38, 27047), (42, 27086), (47, 27170), (55, 27299), (57, 27311), (62, 27365), (64, 27422), (71, 27521), (77, 27596), (78, 27623), (84, 27710), (85, 27716), (86, 27719), (89, 27782), (90, 27785), (91, 27788), (92, 27791), (94, 27821), (98, 27893),

Gene: Kenosha_34 Start: 30014, Stop: 31447, Start Num: 2

Candidate Starts for Kenosha_34:

(Start: 2 @30014 has 44 MA's), (10, 30131), (14, 30224), (17, 30260), (23, 30311), (29, 30392), (30, 30455), (32, 30464), (33, 30485), (35, 30497), (38, 30569), (39, 30575), (46, 30686), (47, 30689), (55, 30818), (57, 30830), (61, 30872), (64, 30941), (66, 30962), (77, 31115), (78, 31142), (81, 31160), (85, 31235), (90, 31304), (91, 31307), (92, 31310), (94, 31340), (96, 31400),

Gene: Kerry_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Kerry_31:

(Start: 2 @26585 has 44 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (47, 27263), (55, 27392), (57, 27404), (59, 27428), (62, 27458), (77, 27689), (78, 27716), (82, 27761), (84, 27803), (85, 27809), (86, 27812), (89, 27875), (90, 27878), (91, 27881), (92, 27884), (94, 27914), (98, 27986),

Gene: Madvan_34 Start: 29246, Stop: 30679, Start Num: 2

Candidate Starts for Madvan_34:

(Start: 2 @29246 has 44 MA's), (10, 29363), (11, 29375), (14, 29456), (17, 29492), (23, 29543), (29, 29624), (30, 29687), (32, 29696), (33, 29717), (35, 29729), (38, 29801), (39, 29807), (46, 29918), (47, 29921), (55, 30050), (57, 30062), (61, 30104), (64, 30173), (66, 30194), (73, 30314), (77, 30347), (78, 30374), (81, 30392), (85, 30467), (90, 30536), (91, 30539), (92, 30542), (94, 30572), (96, 30632),

Gene: Magel_32 Start: 26493, Stop: 27920, Start Num: 2

Candidate Starts for Magel_32:

(Start: 2 @26493 has 44 MA's), (9, 26586), (18, 26745), (23, 26790), (26, 26835), (30, 26934), (32, 26943), (35, 26976), (36, 26991), (38, 27048), (42, 27087), (47, 27171), (55, 27300), (57, 27312), (59, 27336), (62, 27366), (77, 27597), (78, 27624), (82, 27669), (84, 27711), (85, 27717), (86, 27720), (89, 27783), (90, 27786), (91, 27789), (92, 27792), (94, 27822), (98, 27894),

Gene: MajinBuu_35 Start: 29472, Stop: 30905, Start Num: 2

Candidate Starts for MajinBuu_35:

(Start: 2 @29472 has 44 MA's), (14, 29682), (17, 29718), (23, 29769), (29, 29850), (30, 29913), (32, 29922), (33, 29943), (35, 29955), (38, 30027), (40, 30039), (56, 30279), (57, 30288), (58, 30306), (61, 30330), (64, 30399), (77, 30573), (78, 30600), (81, 30618), (85, 30693), (90, 30762), (91, 30765), (94, 30798), (96, 30858),

Gene: Mossy_35 Start: 30659, Stop: 32098, Start Num: 2

Candidate Starts for Mossy_35:

(Start: 2 @30659 has 44 MA's), (8, 30737), (10, 30776), (13, 30809), (14, 30869), (15, 30896), (30, 31100), (32, 31109), (36, 31157), (37, 31208), (38, 31214), (39, 31220), (45, 31322), (47, 31334), (48, 31340), (50, 31382), (52, 31418), (57, 31475), (66, 31607), (67, 31631), (68, 31649), (69, 31652), (77, 31760), (78, 31787), (85, 31880), (92, 31955), (93, 31973), (94, 31985),

Gene: Mysticmoon_34 Start: 29286, Stop: 30719, Start Num: 3

Candidate Starts for Mysticmoon_34:

(1, 29274), (Start: 2 @29280 has 44 MA's), (3, 29286), (8, 29358), (13, 29430), (14, 29490), (16, 29523), (23, 29577), (28, 29643), (30, 29721), (38, 29835), (39, 29841), (45, 29943), (48, 29961), (50, 30003), (52, 30039), (57, 30096), (66, 30228), (67, 30252), (68, 30270), (69, 30273), (77, 30381), (78, 30408), (82, 30453), (85, 30501), (92, 30576), (93, 30594), (94, 30606),

Gene: Nadmeg_35 Start: 30677, Stop: 32110, Start Num: 2

Candidate Starts for Nadmeg_35:

(Start: 2 @30677 has 44 MA's), (10, 30794), (11, 30806), (14, 30887), (17, 30923), (23, 30974), (29, 31055), (30, 31118), (32, 31127), (33, 31148), (35, 31160), (38, 31232), (39, 31238), (46, 31349), (47, 31352), (55, 31481), (57, 31493), (61, 31535), (64, 31604), (66, 31625), (73, 31745), (77, 31778), (78, 31805), (81, 31823), (85, 31898), (90, 31967), (91, 31970), (92, 31973), (94, 32003), (96, 32063),

Gene: Nithya_34 Start: 29461, Stop: 30894, Start Num: 2

Candidate Starts for Nithya_34:

(Start: 2 @29461 has 44 MA's), (6, 29512), (7, 29524), (14, 29671), (23, 29758), (29, 29839), (30, 29902), (32, 29911), (33, 29932), (35, 29944), (38, 30016), (56, 30268), (57, 30277), (58, 30295), (61, 30319), (64, 30388), (77, 30562), (78, 30589), (81, 30607), (85, 30682), (90, 30751), (91, 30754), (94, 30787),

Gene: NoPickles_31 Start: 26217, Stop: 27644, Start Num: 2

Candidate Starts for NoPickles_31:

(Start: 2 @26217 has 44 MA's), (9, 26310), (18, 26469), (23, 26514), (26, 26559), (30, 26658), (32, 26667), (35, 26700), (36, 26715), (38, 26772), (42, 26811), (47, 26895), (55, 27024), (57, 27036), (59, 27060), (62, 27090), (77, 27321), (78, 27348), (82, 27393), (84, 27435), (85, 27441), (86, 27444), (89, 27507), (90, 27510), (91, 27513), (92, 27516), (94, 27546), (98, 27618),

Gene: Odesza_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Odesza_31:

(Start: 2 @26585 has 44 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (47, 27263), (55, 27392), (57, 27404), (59, 27428), (62, 27458), (77, 27689), (78, 27716), (82, 27761), (84, 27803), (85, 27809), (86, 27812), (89, 27875), (90, 27878), (91, 27881), (92, 27884), (94, 27914), (98, 27986),

Gene: OhMyWard_34 Start: 29999, Stop: 31438, Start Num: 2

Candidate Starts for OhMyWard_34:

(Start: 2 @29999 has 44 MA's), (8, 30077), (13, 30149), (14, 30209), (15, 30236), (17, 30245), (21, 30287), (30, 30440), (31, 30446), (32, 30449), (36, 30497), (37, 30548), (38, 30554), (39, 30560), (45, 30662), (47, 30674), (48, 30680), (50, 30722), (52, 30758), (57, 30815), (66, 30947), (67, 30971), (68, 30989), (69, 30992), (77, 31100), (78, 31127), (85, 31220), (92, 31295), (93, 31313), (94, 31325),

Gene: OlgasClover_34 Start: 30185, Stop: 31618, Start Num: 2

Candidate Starts for OlgasClover_34:

(Start: 2 @30185 has 44 MA's), (6, 30236), (14, 30395), (17, 30431), (23, 30482), (29, 30563), (30, 30626), (32, 30635), (33, 30656), (35, 30668), (38, 30740), (40, 30752), (56, 30992), (57, 31001), (58, 31019), (61, 31043), (64, 31112), (66, 31133), (77, 31286), (78, 31313), (81, 31331), (85, 31406), (90, 31475), (91, 31478), (94, 31511), (96, 31571),

Gene: Pepy6_037 Start: 36697, Stop: 38091, Start Num: 2

Candidate Starts for Pepy6_037:

(Start: 2 @36697 has 44 MA's), (24, 37033), (27, 37057), (30, 37141), (31, 37147), (35, 37183), (41, 37279), (47, 37375), (48, 37381), (51, 37450), (53, 37483), (54, 37486), (55, 37507), (61, 37564), (63, 37606), (65, 37636), (68, 37684), (72, 37726), (76, 37774), (77, 37777), (79, 37804), (82, 37843), (85, 37891), (86, 37894), (88, 37936), (92, 37966), (94, 37996), (95, 37999),

Gene: Perkunas_33 Start: 26981, Stop: 28405, Start Num: 2

Candidate Starts for Perkunas_33:

(Start: 2 @26981 has 44 MA's), (5, 27008), (12, 27128), (17, 27227), (18, 27233), (20, 27245), (23, 27278), (26, 27323), (32, 27431), (35, 27464), (38, 27536), (41, 27563), (42, 27575), (47, 27659), (56, 27791), (62, 27854), (64, 27911), (71, 28010), (77, 28085), (78, 28112), (82, 28157), (85, 28205), (86, 28208), (89, 28271), (90, 28274), (91, 28277), (94, 28310), (96, 28370),

Gene: Petito_33 Start: 27745, Stop: 29172, Start Num: 2

Candidate Starts for Petito_33:

(Start: 2 @27745 has 44 MA's), (3, 27751), (13, 27895), (14, 27955), (16, 27988), (30, 28186), (32, 28195), (33, 28216), (34, 28225), (38, 28300), (43, 28387), (45, 28408), (50, 28468), (55, 28549), (57, 28561), (61, 28603), (64, 28672), (70, 28750), (71, 28771), (77, 28846), (85, 28966), (90, 29035), (91, 29038), (92, 29041), (94, 29071),

Gene: Phepper_34 Start: 29244, Stop: 30677, Start Num: 2

Candidate Starts for Phepper_34:

(Start: 2 @29244 has 44 MA's), (10, 29361), (11, 29373), (14, 29454), (17, 29490), (23, 29541), (29, 29622), (30, 29685), (32, 29694), (33, 29715), (35, 29727), (38, 29799), (39, 29805), (46, 29916), (47, 29919), (52, 30003), (55, 30048), (58, 30078), (61, 30102), (64, 30171), (75, 30336), (77, 30345), (78, 30372), (85, 30465), (90, 30534), (91, 30537), (92, 30540), (94, 30570), (96, 30630),

Gene: Pherobrine_33 Start: 29278, Stop: 30717, Start Num: 2

Candidate Starts for Pherobrine_33:

(1, 29272), (Start: 2 @29278 has 44 MA's), (3, 29284), (8, 29356), (13, 29428), (14, 29488), (16, 29521), (23, 29575), (28, 29641), (30, 29719), (38, 29833), (39, 29839), (45, 29941), (48, 29959), (50, 30001), (52, 30037), (57, 30094), (66, 30226), (68, 30268), (69, 30271), (77, 30379), (78, 30406), (82, 30451), (85, 30499), (92, 30574), (93, 30592), (94, 30604),

Gene: Poco6_038 Start: 38719, Stop: 40113, Start Num: 2

Candidate Starts for Poco6_038:

(Start: 2 @38719 has 44 MA's), (5, 38746), (24, 39055), (27, 39079), (30, 39163), (33, 39193), (35, 39205), (36, 39220), (42, 39313), (47, 39397), (48, 39403), (51, 39472), (53, 39505), (54, 39508), (55, 39529), (56, 39532), (60, 39574), (61, 39586), (63, 39628), (66, 39676), (68, 39706), (72, 39748), (74, 39775), (76, 39796), (77, 39799), (79, 39826), (82, 39865), (85, 39913), (88, 39958), (92, 39988), (94, 40018),

Gene: Rickmore_33 Start: 27895, Stop: 29328, Start Num: 2

Candidate Starts for Rickmore_33:

(Start: 2 @27895 has 44 MA's), (6, 27946), (10, 28012), (11, 28024), (14, 28105), (17, 28141), (23, 28192), (29, 28273), (30, 28336), (32, 28345), (33, 28366), (35, 28378), (38, 28450), (40, 28462), (47, 28570), (52, 28654), (55, 28699), (61, 28753), (64, 28822), (77, 28996), (80, 29035), (85, 29116), (87, 29140), (91, 29188), (94, 29221), (96, 29281), (97, 29284),

Gene: Roney_31 Start: 26585, Stop: 28012, Start Num: 2

Candidate Starts for Roney_31:

(Start: 2 @26585 has 44 MA's), (9, 26678), (18, 26837), (23, 26882), (26, 26927), (30, 27026), (32, 27035), (35, 27068), (36, 27083), (38, 27140), (42, 27179), (47, 27263), (55, 27392), (57, 27404), (62, 27458), (77, 27689), (78, 27716), (82, 27761), (84, 27803), (85, 27809), (86, 27812), (89, 27875), (90, 27878), (91, 27881), (92, 27884), (94, 27914), (98, 27986),

Gene: Runhaar_34 Start: 29247, Stop: 30680, Start Num: 2

Candidate Starts for Runhaar_34:

(1, 29241), (Start: 2 @29247 has 44 MA's), (11, 29376), (14, 29457), (17, 29493), (23, 29544), (29, 29625), (30, 29688), (32, 29697), (33, 29718), (35, 29730), (38, 29802), (39, 29808), (46, 29919), (47, 29922), (52, 30006), (55, 30051), (58, 30081), (61, 30105), (64, 30174), (75, 30339), (77, 30348), (78, 30375), (85, 30468), (90, 30537), (91, 30540), (92, 30543), (94, 30573),

Gene: Schwartz33_35 Start: 29578, Stop: 31017, Start Num: 2

Candidate Starts for Schwartz33_35:

(Start: 2 @29578 has 44 MA's), (4, 29587), (7, 29641), (10, 29695), (11, 29707), (18, 29830), (19, 29839), (21, 29866), (22, 29872), (25, 29917), (28, 29941), (30, 30019), (33, 30049), (36, 30076), (37, 30127), (38, 30133), (40, 30145), (47, 30253), (48, 30259), (55, 30382), (56, 30385), (57, 30394), (61, 30436), (67, 30550), (68, 30568), (69, 30571), (71, 30604), (73, 30646), (77, 30679), (78, 30706), (83, 30766), (85, 30799), (94, 30904),

Gene: Secretariat_32 Start: 28312, Stop: 29748, Start Num: 2

Candidate Starts for Secretariat_32:

(Start: 2 @28312 has 44 MA's), (3, 28318), (6, 28363), (13, 28462), (14, 28522), (17, 28558), (18, 28564), (28, 28675), (32, 28762), (33, 28783), (35, 28795), (36, 28810), (38, 28867), (44, 28966), (45, 28975), (52, 29071), (55, 29116), (57, 29128), (61, 29170), (68, 29302), (69, 29305), (73, 29380), (77, 29413), (85, 29533), (92, 29608), (93, 29626), (94, 29638), (96, 29698),

Gene: ShaggyRogers_37 Start: 29250, Stop: 30683, Start Num: 2

Candidate Starts for ShaggyRogers_37:

(1, 29244), (Start: 2 @29250 has 44 MA's), (11, 29379), (14, 29460), (17, 29496), (23, 29547), (29, 29628), (30, 29691), (32, 29700), (33, 29721), (35, 29733), (38, 29805), (39, 29811), (40, 29817), (52, 30009), (56, 30057), (57, 30066), (61, 30108), (64, 30177), (66, 30198), (68, 30240), (69, 30243), (77, 30351), (78, 30378), (85, 30471), (90, 30540), (92, 30546), (94, 30576), (96, 30636),

Gene: Talon44_33 Start: 26654, Stop: 28078, Start Num: 2

Candidate Starts for Talon44_33:

(Start: 2 @26654 has 44 MA's), (5, 26681), (12, 26801), (17, 26900), (18, 26906), (20, 26918), (23, 26951), (26, 26996), (32, 27104), (35, 27137), (38, 27209), (41, 27236), (42, 27248), (47, 27332), (56, 27464), (62, 27527), (64, 27584), (71, 27683), (77, 27758), (78, 27785), (82, 27830), (85, 27878), (86, 27881), (89, 27944), (90, 27947), (91, 27950), (94, 27983), (96, 28043),

Gene: Tanis_31 Start: 26435, Stop: 27862, Start Num: 2

Candidate Starts for Tanis_31:

(Start: 2 @26435 has 44 MA's), (9, 26528), (18, 26687), (23, 26732), (26, 26777), (30, 26876), (32, 26885), (35, 26918), (36, 26933), (38, 26990), (42, 27029), (47, 27113), (55, 27242), (57, 27254), (59, 27278), (62, 27308), (77, 27539), (78, 27566), (82, 27611), (84, 27653), (85, 27659), (86, 27662), (89, 27725), (90, 27728), (91, 27731), (92, 27734), (94, 27764), (98, 27836),

Gene: TenaciousP_35 Start: 30901, Stop: 32334, Start Num: 2

Candidate Starts for TenaciousP_35:

(Start: 2 @30901 has 44 MA's), (14, 31111), (17, 31147), (23, 31198), (29, 31279), (30, 31342), (32, 31351), (33, 31372), (35, 31384), (38, 31456), (40, 31468), (56, 31708), (57, 31717), (58, 31735), (61, 31759), (64, 31828), (77, 32002), (78, 32029), (81, 32047), (85, 32122), (90, 32191), (91, 32194), (94, 32227), (96, 32287),

Gene: Untouchable_34 Start: 29603, Stop: 31036, Start Num: 2

Candidate Starts for Untouchable_34:

(Start: 2 @29603 has 44 MA's), (10, 29720), (11, 29732), (14, 29813), (17, 29849), (23, 29900), (29, 29981), (30, 30044), (32, 30053), (33, 30074), (35, 30086), (38, 30158), (39, 30164), (46, 30275), (47, 30278), (55, 30407), (57, 30419), (61, 30461), (64, 30530), (66, 30551), (77, 30704), (78, 30731), (81,

30749), (85, 30824), (90, 30893), (91, 30896), (92, 30899), (94, 30929), (96, 30989),

Gene: Vardy_34 Start: 29212, Stop: 30645, Start Num: 2

Candidate Starts for Vardy_34:

(1, 29206), (Start: 2 @29212 has 44 MA's), (11, 29341), (14, 29422), (17, 29458), (23, 29509), (29, 29590), (30, 29653), (32, 29662), (33, 29683), (35, 29695), (38, 29767), (39, 29773), (46, 29884), (47, 29887), (52, 29971), (55, 30016), (58, 30046), (61, 30070), (64, 30139), (75, 30304), (77, 30313), (78, 30340), (85, 30433), (90, 30502), (91, 30505), (92, 30508), (94, 30538), (96, 30598),

Gene: Zeph_35 Start: 29961, Stop: 31394, Start Num: 2

Candidate Starts for Zeph_35:

(Start: 2 @29961 has 44 MA's), (10, 30078), (11, 30090), (14, 30171), (17, 30207), (23, 30258), (29, 30339), (30, 30402), (32, 30411), (33, 30432), (35, 30444), (38, 30516), (39, 30522), (46, 30633), (47, 30636), (55, 30765), (57, 30777), (61, 30819), (64, 30888), (66, 30909), (73, 31029), (77, 31062), (78, 31089), (81, 31107), (85, 31182), (90, 31251), (91, 31254), (92, 31257), (94, 31287), (96, 31347),