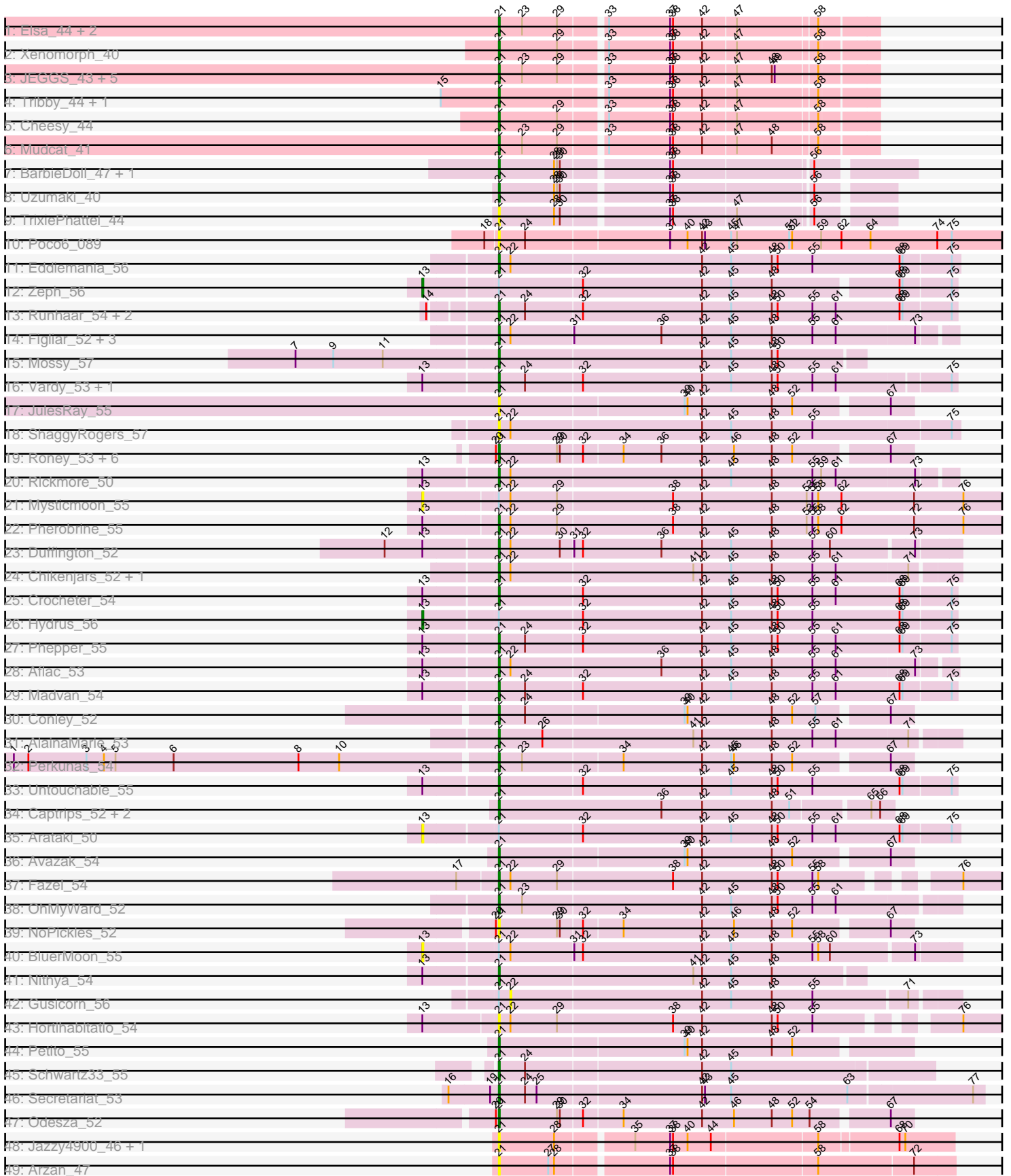


Pham 195581



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 195581 Report

This analysis was run 12/09/24 on database version 580.

Pham number 195581 has 74 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Elsa_44, Arcadia_44, Nason_44
- Track 2 : Xenomorph_40
- Track 3 : JEGGS_43, Benllo_43, Mooshroom_46, BenitoAntonio_44, Kardesai_45, Heisenberger_43
- Track 4 : Tribby_44, Correa_42
- Track 5 : Cheesy_44
- Track 6 : Mudcat_41
- Track 7 : BarbieDoll_47, Lewando_45
- Track 8 : Uzumaki_40
- Track 9 : TrixiePhattel_44
- Track 10 : Poco6_089
- Track 11 : Eddiemania_56
- Track 12 : Zeph_56
- Track 13 : Runhaar_54, Kenosha_53, Nadmeg_55
- Track 14 : Figliar_52, Jodelie19_53, TenaciousP_54, OlgasClover_55
- Track 15 : Mossy_57
- Track 16 : Vardy_53, Burley_54
- Track 17 : JulesRay_55
- Track 18 : ShaggyRogers_57
- Track 19 : Roney_53, Kerry_52, Tanis_53, Capybara_53, Gravy_52, Gill_53, Magel_54
- Track 20 : Rickmore_50
- Track 21 : Mysticmoon_55
- Track 22 : Pherobrine_55
- Track 23 : Duffington_52
- Track 24 : Chickenjars_52, EndAve_55
- Track 25 : Crocheter_54
- Track 26 : Hydrus_56
- Track 27 : Phepper_55
- Track 28 : Aflac_53
- Track 29 : Madvan_54
- Track 30 : Conley_52
- Track 31 : AlainaMarie_53
- Track 32 : Perkunas_54
- Track 33 : Untouchable_55
- Track 34 : Captrips_52, Artorias_53, FortCran_53
- Track 35 : Arataki_50

- Track 36 : Avazak_54
- Track 37 : Fazel_54
- Track 38 : OhMyWard_52
- Track 39 : NoPickles_52
- Track 40 : BluerMoon_55
- Track 41 : Nithya_54
- Track 42 : Gusicorn_56
- Track 43 : Hortihabitatio_54
- Track 44 : Petite_55
- Track 45 : Schwartz33_55
- Track 46 : Secretariat_53
- Track 47 : Odesza_52
- Track 48 : Jazzy4900_46, Sunny4976_45
- Track 49 : Arzan_47

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

The start number called the most often in the published annotations is 21, it was called in 57 of the 59 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac_53, AlainaMarie_53, Arcadia_44, Artorias_53, Arzan_47, Avazak_54, BarbieDoll_47, BenitoAntonio_44, Benllo_43, Burley_54, Captrips_52, Copybara_53, Cheesy_44, Chikenjars_52, Conley_52, Correa_42, Crocheter_54, Duffington_52, Eddiemania_56, Elsa_44, EndAve_55, Fazel_54, Figliar_52, FortCran_53, Gill_53, Gravy_52, Heisenberger_43, Hortihabitatio_54, JEGGS_43, Jazzy4900_46, Jodelie19_53, JulesRay_55, Kardesai_45, Kenosha_53, Kerry_52, Lewando_45, Madvan_54, Magel_54, Mooshroom_46, Mossy_57, Mudcat_41, Nadmeg_55, Nason_44, Nithya_54, NoPickles_52, Odesza_52, OhMyWard_52, OlgasClover_55, Perkunas_54, Petite_55, Phepper_55, Pherobrine_55, Poco6_089, Rickmore_50, Roney_53, Runhaar_54, Schwartz33_55, Secretariat_53, ShaggyRogers_57, Sunny4976_45, Tanis_53, TenaciousP_54, Tribby_44, TrixiePhattel_44, Untouchable_55, Uzumaki_40, Vardy_53, Xenomorph_40,

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

- Arataki_50, BluerMoon_55, Gusicorn_56, Hydrus_56, Mysticmoon_55, Zeph_56,

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

-

Summary by start number:

Start 13:

- Found in 17 of 74 (23.0%) of genes in pham
- Manual Annotations of this start: 2 of 59
- Called 29.4% of time when present
- Phage (with cluster) where this start called: Arataki_50 (DJ), BluerMoon_55 (DJ), Hydrus_56 (DJ), Mysticmoon_55 (DJ), Zeph_56 (DJ),

Start 21:

- Found in 74 of 74 (100.0%) of genes in pham
- Manual Annotations of this start: 57 of 59
- Called 91.9% of time when present
- Phage (with cluster) where this start called: Aflac_53 (DJ), AlainaMarie_53 (DJ), Arcadia_44 (AM), Artorias_53 (DJ), Arzan_47 (FI), Avazak_54 (DJ), BarbieDoll_47 (AU6), BenitoAntonio_44 (AM), Benllo_43 (AM), Burley_54 (DJ), Captrips_52 (DJ), Capybara_53 (DJ), Cheesy_44 (AM), Chikenjars_52 (DJ), Conley_52 (DJ), Correa_42 (AM), Crocheter_54 (DJ), Duffington_52 (DJ), Eddiemania_56 (DJ), Elsa_44 (AM), EndAve_55 (DJ), Fazel_54 (DJ), Figliar_52 (DJ), FortCran_53 (DJ), Gill_53 (DJ), Gravy_52 (DJ), Heisenberger_43 (AM), Hortihabitatio_54 (DJ), JEGGS_43 (AM), Jazzy4900_46 (FI), Jodelie19_53 (DJ), JulesRay_55 (DJ), Kardesai_45 (AM), Kenosha_53 (DJ), Kerry_52 (DJ), Lewando_45 (AU6), Madvan_54 (DJ), Magel_54 (DJ), Mooshroom_46 (AM), Mossy_57 (DJ), Mudcat_41 (AM), Nadmeg_55 (DJ), Nason_44 (AM), Nithya_54 (DJ), NoPickles_52 (DJ), Odesza_52 (DJ), OhMyWard_52 (DJ), OlgasClover_55 (DJ), Perkunas_54 (DJ), Petite_55 (DJ), Phepper_55 (DJ), Pherobrine_55 (DJ), Poco6_089 (CC), Rickmore_50 (DJ), Roney_53 (DJ), Runhaar_54 (DJ), Schwartz33_55 (DJ), Secretariat_53 (DJ), ShaggyRogers_57 (DJ), Sunny4976_45 (FI), Tanis_53 (DJ), TenaciousP_54 (DJ), Tribby_44 (AM), TrixiePhattel_44 (AU6), Untouchable_55 (DJ), Uzumaki_40 (AU6), Vardy_53 (DJ), Xenomorph_40 (AM),

Start 22:

- Found in 17 of 74 (23.0%) of genes in pham
- No Manual Annotations of this start.
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Gusicorn_56 (DJ),

Summary by clusters:

There are 5 clusters represented in this pham: CC, AM, FI, DJ, AU6,

Info for manual annotations of cluster AM:

- Start number 21 was manually annotated 13 times for cluster AM.

Info for manual annotations of cluster AU6:

- Start number 21 was manually annotated 2 times for cluster AU6.

Info for manual annotations of cluster DJ:

- Start number 13 was manually annotated 2 times for cluster DJ.
- Start number 21 was manually annotated 42 times for cluster DJ.

Gene Information:

Gene: Aflac_53 Start: 37122, Stop: 37580, Start Num: 21

Candidate Starts for Aflac_53:

(Start: 13 @37050 has 2 MA's), (Start: 21 @37122 has 57 MA's), (22, 37134), (36, 37287), (42, 37329), (45, 37359), (48, 37401), (55, 37443), (61, 37467), (73, 37545),

Gene: AlainaMarie_53 Start: 37102, Stop: 37566, Start Num: 21

Candidate Starts for AlainaMarie_53:

(Start: 21 @37102 has 57 MA's), (26, 37147), (41, 37300), (42, 37309), (48, 37381), (55, 37423), (61, 37447), (71, 37519),

Gene: Arataki_50 Start: 36159, Stop: 36701, Start Num: 13

Candidate Starts for Arataki_50:

(Start: 13 @36159 has 2 MA's), (Start: 21 @36231 has 57 MA's), (32, 36315), (42, 36438), (45, 36468), (48, 36510), (50, 36516), (55, 36552), (61, 36576), (68, 36642), (69, 36645), (75, 36693),

Gene: Arcadia_44 Start: 30490, Stop: 30855, Start Num: 21

Candidate Starts for Arcadia_44:

(Start: 21 @30490 has 57 MA's), (23, 30514), (29, 30550), (33, 30592), (37, 30655), (38, 30658), (42, 30688), (47, 30721), (58, 30799),

Gene: Artorias_53 Start: 36489, Stop: 36887, Start Num: 21

Candidate Starts for Artorias_53:

(Start: 21 @36489 has 57 MA's), (36, 36657), (42, 36699), (48, 36771), (51, 36789), (65, 36864), (66, 36873),

Gene: Arzan_47 Start: 31913, Stop: 32362, Start Num: 21

Candidate Starts for Arzan_47:

(Start: 21 @31913 has 57 MA's), (27, 31964), (28, 31970), (37, 32078), (38, 32081), (58, 32225), (72, 32321),

Gene: Avazak_54 Start: 36834, Stop: 37244, Start Num: 21

Candidate Starts for Avazak_54:

(Start: 21 @36834 has 57 MA's), (39, 37020), (40, 37023), (42, 37038), (48, 37110), (52, 37131), (67, 37221),

Gene: BarbieDoll_47 Start: 32497, Stop: 32892, Start Num: 21

Candidate Starts for BarbieDoll_47:

(Start: 21 @32497 has 57 MA's), (28, 32554), (29, 32557), (30, 32560), (37, 32662), (38, 32665), (56, 32800),

Gene: BenitoAntonio_44 Start: 30067, Stop: 30432, Start Num: 21

Candidate Starts for BenitoAntonio_44:

(Start: 21 @30067 has 57 MA's), (23, 30091), (29, 30127), (33, 30169), (37, 30232), (38, 30235), (42, 30265), (47, 30298), (48, 30334), (49, 30337), (58, 30376),

Gene: Benllo_43 Start: 30751, Stop: 31116, Start Num: 21

Candidate Starts for Benllo_43:

(Start: 21 @30751 has 57 MA's), (23, 30775), (29, 30811), (33, 30853), (37, 30916), (38, 30919), (42, 30949), (47, 30982), (48, 31018), (49, 31021), (58, 31060),

Gene: BluerMoon_55 Start: 37073, Stop: 37609, Start Num: 13

Candidate Starts for BluerMoon_55:

(Start: 13 @37073 has 2 MA's), (Start: 21 @37145 has 57 MA's), (22, 37157), (31, 37220), (32, 37229), (42, 37352), (45, 37382), (48, 37424), (55, 37466), (58, 37472), (60, 37484), (73, 37565),

Gene: Burley_54 Start: 36888, Stop: 37352, Start Num: 21

Candidate Starts for Burley_54:

(Start: 13 @36816 has 2 MA's), (Start: 21 @36888 has 57 MA's), (24, 36915), (32, 36972), (42, 37095), (45, 37125), (48, 37167), (50, 37173), (55, 37209), (61, 37233), (75, 37344),

Gene: Captrips_52 Start: 35964, Stop: 36362, Start Num: 21

Candidate Starts for Captrips_52:

(Start: 21 @35964 has 57 MA's), (36, 36132), (42, 36174), (48, 36246), (51, 36264), (65, 36339), (66, 36348),

Gene: Capybara_53 Start: 36333, Stop: 36743, Start Num: 21

Candidate Starts for Capybara_53:

(20, 36330), (Start: 21 @36333 has 57 MA's), (29, 36393), (30, 36396), (32, 36417), (34, 36456), (36, 36495), (42, 36537), (46, 36570), (48, 36609), (52, 36630), (67, 36720),

Gene: Cheesy_44 Start: 30188, Stop: 30553, Start Num: 21

Candidate Starts for Cheesy_44:

(Start: 21 @30188 has 57 MA's), (29, 30248), (33, 30290), (37, 30353), (38, 30356), (42, 30386), (47, 30419), (58, 30497),

Gene: Chikenjars_52 Start: 37114, Stop: 37578, Start Num: 21

Candidate Starts for Chikenjars_52:

(Start: 21 @37114 has 57 MA's), (22, 37126), (41, 37312), (42, 37321), (45, 37351), (48, 37393), (55, 37435), (61, 37459), (71, 37531),

Gene: Conley_52 Start: 37120, Stop: 37530, Start Num: 21

Candidate Starts for Conley_52:

(Start: 21 @37120 has 57 MA's), (24, 37147), (39, 37306), (40, 37309), (42, 37324), (48, 37396), (52, 37417), (57, 37441), (67, 37507),

Gene: Correa_42 Start: 29373, Stop: 29738, Start Num: 21

Candidate Starts for Correa_42:

(15, 29313), (Start: 21 @29373 has 57 MA's), (33, 29475), (37, 29538), (38, 29541), (42, 29571), (47, 29604), (58, 29682),

Gene: Crocheter_54 Start: 37278, Stop: 37745, Start Num: 21

Candidate Starts for Crocheter_54:

(Start: 13 @37206 has 2 MA's), (Start: 21 @37278 has 57 MA's), (32, 37362), (42, 37485), (45, 37515), (48, 37557), (50, 37563), (55, 37599), (61, 37623), (68, 37689), (69, 37692), (75, 37740),

Gene: Duffington_52 Start: 36809, Stop: 37273, Start Num: 21

Candidate Starts for Duffington_52:

(12, 36698), (Start: 13 @36737 has 2 MA's), (Start: 21 @36809 has 57 MA's), (22, 36821), (30, 36872), (31, 36884), (32, 36893), (36, 36974), (42, 37016), (45, 37046), (48, 37088), (55, 37130), (60, 37148), (73, 37229),

Gene: Eddiemania_56 Start: 38023, Stop: 38493, Start Num: 21

Candidate Starts for Eddiemania_56:

(Start: 21 @38023 has 57 MA's), (22, 38035), (42, 38230), (45, 38260), (48, 38302), (50, 38308), (55, 38344), (68, 38434), (69, 38437), (75, 38485),

Gene: Elsa_44 Start: 30490, Stop: 30855, Start Num: 21

Candidate Starts for Elsa_44:

(Start: 21 @30490 has 57 MA's), (23, 30514), (29, 30550), (33, 30592), (37, 30655), (38, 30658), (42, 30688), (47, 30721), (58, 30799),

Gene: EndAve_55 Start: 37282, Stop: 37746, Start Num: 21

Candidate Starts for EndAve_55:

(Start: 21 @37282 has 57 MA's), (22, 37294), (41, 37480), (42, 37489), (45, 37519), (48, 37561), (55, 37603), (61, 37627), (71, 37699),

Gene: Fazel_54 Start: 36737, Stop: 37225, Start Num: 21

Candidate Starts for Fazel_54:

(17, 36698), (Start: 21 @36737 has 57 MA's), (22, 36749), (29, 36797), (38, 36914), (42, 36944), (48, 37016), (50, 37022), (55, 37058), (58, 37064), (76, 37175),

Gene: Figliar_52 Start: 37190, Stop: 37648, Start Num: 21

Candidate Starts for Figliar_52:

(Start: 21 @37190 has 57 MA's), (22, 37202), (31, 37265), (36, 37355), (42, 37397), (45, 37427), (48, 37469), (55, 37511), (61, 37535), (73, 37613),

Gene: FortCran_53 Start: 36489, Stop: 36887, Start Num: 21

Candidate Starts for FortCran_53:

(Start: 21 @36489 has 57 MA's), (36, 36657), (42, 36699), (48, 36771), (51, 36789), (65, 36864), (66, 36873),

Gene: Gill_53 Start: 36350, Stop: 36760, Start Num: 21

Candidate Starts for Gill_53:

(20, 36347), (Start: 21 @36350 has 57 MA's), (29, 36410), (30, 36413), (32, 36434), (34, 36473), (36, 36512), (42, 36554), (46, 36587), (48, 36626), (52, 36647), (67, 36737),

Gene: Gravy_52 Start: 36023, Stop: 36433, Start Num: 21

Candidate Starts for Gravy_52:

(20, 36020), (Start: 21 @36023 has 57 MA's), (29, 36083), (30, 36086), (32, 36107), (34, 36146), (36, 36185), (42, 36227), (46, 36260), (48, 36299), (52, 36320), (67, 36410),

Gene: Gusicorn_56 Start: 37216, Stop: 37665, Start Num: 22

Candidate Starts for Gusicorn_56:

(Start: 21 @37204 has 57 MA's), (22, 37216), (42, 37411), (45, 37441), (48, 37483), (55, 37525), (71, 37618),

Gene: Heisenberger_43 Start: 29931, Stop: 30296, Start Num: 21

Candidate Starts for Heisenberger_43:

(Start: 21 @29931 has 57 MA's), (23, 29955), (29, 29991), (33, 30033), (37, 30096), (38, 30099), (42, 30129), (47, 30162), (48, 30198), (49, 30201), (58, 30240),

Gene: Hortihabitatio_54 Start: 36942, Stop: 37460, Start Num: 21

Candidate Starts for Hortihabitatio_54:

(Start: 13 @36870 has 2 MA's), (Start: 21 @36942 has 57 MA's), (22, 36954), (29, 37002), (38, 37119), (42, 37149), (48, 37221), (50, 37227), (55, 37263), (76, 37380),

Gene: Hydrus_56 Start: 37978, Stop: 38517, Start Num: 13

Candidate Starts for Hydrus_56:

(Start: 13 @37978 has 2 MA's), (Start: 21 @38050 has 57 MA's), (32, 38134), (42, 38257), (45, 38287), (48, 38329), (50, 38335), (55, 38371), (68, 38461), (69, 38464), (75, 38512),

Gene: JEGGS_43 Start: 29985, Stop: 30350, Start Num: 21

Candidate Starts for JEGGS_43:

(Start: 21 @29985 has 57 MA's), (23, 30009), (29, 30045), (33, 30087), (37, 30150), (38, 30153), (42, 30183), (47, 30216), (48, 30252), (49, 30255), (58, 30294),

Gene: Jazzy4900_46 Start: 32761, Stop: 33207, Start Num: 21

Candidate Starts for Jazzy4900_46:

(Start: 21 @32761 has 57 MA's), (28, 32818), (35, 32890), (37, 32926), (38, 32929), (40, 32944), (44, 32968), (58, 33073), (68, 33151), (70, 33157),

Gene: Jodelie19_53 Start: 38594, Stop: 39052, Start Num: 21

Candidate Starts for Jodelie19_53:

(Start: 21 @38594 has 57 MA's), (22, 38606), (31, 38669), (36, 38759), (42, 38801), (45, 38831), (48, 38873), (55, 38915), (61, 38939), (73, 39017),

Gene: JulesRay_55 Start: 36516, Stop: 36926, Start Num: 21

Candidate Starts for JulesRay_55:

(Start: 21 @36516 has 57 MA's), (39, 36702), (40, 36705), (42, 36720), (48, 36792), (52, 36813), (67, 36903),

Gene: Kardesai_45 Start: 30651, Stop: 31016, Start Num: 21

Candidate Starts for Kardesai_45:

(Start: 21 @30651 has 57 MA's), (23, 30675), (29, 30711), (33, 30753), (37, 30816), (38, 30819), (42, 30849), (47, 30882), (48, 30918), (49, 30921), (58, 30960),

Gene: Kenosha_53 Start: 37509, Stop: 37976, Start Num: 21

Candidate Starts for Kenosha_53:

(14, 37449), (Start: 21 @37509 has 57 MA's), (24, 37536), (32, 37593), (42, 37716), (45, 37746), (48, 37788), (50, 37794), (55, 37830), (61, 37854), (68, 37920), (69, 37923), (75, 37971),

Gene: Kerry_52 Start: 36023, Stop: 36433, Start Num: 21

Candidate Starts for Kerry_52:

(20, 36020), (Start: 21 @36023 has 57 MA's), (29, 36083), (30, 36086), (32, 36107), (34, 36146), (36, 36185), (42, 36227), (46, 36260), (48, 36299), (52, 36320), (67, 36410),

Gene: Lewando_45 Start: 32283, Stop: 32678, Start Num: 21

Candidate Starts for Lewando_45:

(Start: 21 @32283 has 57 MA's), (28, 32340), (29, 32343), (30, 32346), (37, 32448), (38, 32451), (56, 32586),

Gene: Madvan_54 Start: 36919, Stop: 37386, Start Num: 21

Candidate Starts for Madvan_54:

(Start: 13 @36847 has 2 MA's), (Start: 21 @36919 has 57 MA's), (24, 36946), (32, 37003), (42, 37126), (45, 37156), (48, 37198), (55, 37240), (61, 37264), (68, 37330), (69, 37333), (75, 37381),

Gene: Magel_54 Start: 36254, Stop: 36676, Start Num: 21

Candidate Starts for Magel_54:

(20, 36251), (Start: 21 @36254 has 57 MA's), (29, 36314), (30, 36317), (32, 36338), (34, 36377), (36, 36416), (42, 36458), (46, 36491), (48, 36530), (52, 36551), (67, 36653),

Gene: Mooshroom_46 Start: 30651, Stop: 31016, Start Num: 21

Candidate Starts for Mooshroom_46:

(Start: 21 @30651 has 57 MA's), (23, 30675), (29, 30711), (33, 30753), (37, 30816), (38, 30819), (42, 30849), (47, 30882), (48, 30918), (49, 30921), (58, 30960),

Gene: Mossy_57 Start: 39044, Stop: 39415, Start Num: 21

Candidate Starts for Mossy_57:

(7, 38843), (9, 38882), (11, 38933), (Start: 21 @39044 has 57 MA's), (42, 39251), (45, 39281), (48, 39323), (50, 39329),

Gene: Mudcat_41 Start: 31344, Stop: 31709, Start Num: 21

Candidate Starts for Mudcat_41:

(Start: 21 @31344 has 57 MA's), (23, 31368), (29, 31404), (33, 31446), (37, 31509), (38, 31512), (42, 31542), (47, 31575), (48, 31611), (58, 31653),

Gene: Mysticmoon_55 Start: 37671, Stop: 38270, Start Num: 13

Candidate Starts for Mysticmoon_55:

(Start: 13 @37671 has 2 MA's), (Start: 21 @37743 has 57 MA's), (22, 37755), (29, 37803), (38, 37920), (42, 37950), (48, 38022), (53, 38058), (55, 38064), (58, 38070), (62, 38094), (72, 38169), (76, 38220),

Gene: Nadmeg_55 Start: 38165, Stop: 38632, Start Num: 21

Candidate Starts for Nadmeg_55:

(14, 38105), (Start: 21 @38165 has 57 MA's), (24, 38192), (32, 38249), (42, 38372), (45, 38402), (48, 38444), (50, 38450), (55, 38486), (61, 38510), (68, 38576), (69, 38579), (75, 38627),

Gene: Nason_44 Start: 30490, Stop: 30855, Start Num: 21

Candidate Starts for Nason_44:

(Start: 21 @30490 has 57 MA's), (23, 30514), (29, 30550), (33, 30592), (37, 30655), (38, 30658), (42, 30688), (47, 30721), (58, 30799),

Gene: Nithya_54 Start: 37126, Stop: 37497, Start Num: 21

Candidate Starts for Nithya_54:

(Start: 13 @37054 has 2 MA's), (Start: 21 @37126 has 57 MA's), (41, 37324), (42, 37333), (45, 37363), (48, 37405),

Gene: NoPickles_52 Start: 35688, Stop: 36098, Start Num: 21

Candidate Starts for NoPickles_52:

(20, 35685), (Start: 21 @35688 has 57 MA's), (29, 35748), (30, 35751), (32, 35772), (34, 35811), (42, 35892), (46, 35925), (48, 35964), (52, 35985), (67, 36075),

Gene: Odesza_52 Start: 36078, Stop: 36488, Start Num: 21

Candidate Starts for Odesza_52:

(20, 36075), (Start: 21 @36078 has 57 MA's), (29, 36138), (30, 36141), (32, 36162), (34, 36201), (42, 36282), (46, 36315), (48, 36354), (52, 36375), (54, 36393), (67, 36465),

Gene: OhMyWard_52 Start: 38137, Stop: 38601, Start Num: 21

Candidate Starts for OhMyWard_52:

(Start: 21 @38137 has 57 MA's), (23, 38161), (42, 38344), (45, 38374), (48, 38416), (50, 38422), (55, 38458), (61, 38482),

Gene: OlgasClover_55 Start: 38175, Stop: 38633, Start Num: 21

Candidate Starts for OlgasClover_55:

(Start: 21 @38175 has 57 MA's), (22, 38187), (31, 38250), (36, 38340), (42, 38382), (45, 38412), (48, 38454), (55, 38496), (61, 38520), (73, 38598),

Gene: Perkunas_54 Start: 36360, Stop: 36770, Start Num: 21

Candidate Starts for Perkunas_54:

(1, 35874), (2, 35889), (3, 35949), (4, 35967), (5, 35979), (6, 36039), (8, 36168), (10, 36210), (Start: 21 @36360 has 57 MA's), (23, 36384), (34, 36483), (42, 36564), (45, 36594), (46, 36597), (48, 36636),

(52, 36657), (67, 36747),

Gene: Petito_55 Start: 38180, Stop: 38590, Start Num: 21

Candidate Starts for Petito_55:

(Start: 21 @38180 has 57 MA's), (39, 38366), (40, 38369), (42, 38384), (48, 38456), (52, 38477),

Gene: Phepper_55 Start: 37181, Stop: 37648, Start Num: 21

Candidate Starts for Phepper_55:

(Start: 13 @37109 has 2 MA's), (Start: 21 @37181 has 57 MA's), (24, 37208), (32, 37265), (42, 37388), (45, 37418), (48, 37460), (50, 37466), (55, 37502), (61, 37526), (68, 37592), (69, 37595), (75, 37643),

Gene: Pherobrine_55 Start: 38033, Stop: 38560, Start Num: 21

Candidate Starts for Pherobrine_55:

(Start: 13 @37961 has 2 MA's), (Start: 21 @38033 has 57 MA's), (22, 38045), (29, 38093), (38, 38210), (42, 38240), (48, 38312), (53, 38348), (55, 38354), (58, 38360), (62, 38384), (72, 38459), (76, 38510),

Gene: Poco6_089 Start: 48918, Stop: 49439, Start Num: 21

Candidate Starts for Poco6_089:

(18, 48906), (Start: 21 @48918 has 57 MA's), (24, 48945), (37, 49089), (40, 49107), (42, 49122), (43, 49125), (45, 49152), (47, 49158), (51, 49212), (52, 49215), (59, 49245), (62, 49266), (64, 49296), (74, 49365), (75, 49380),

Gene: Rickmore_50 Start: 34982, Stop: 35440, Start Num: 21

Candidate Starts for Rickmore_50:

(Start: 13 @34910 has 2 MA's), (Start: 21 @34982 has 57 MA's), (22, 34994), (42, 35189), (45, 35219), (48, 35261), (55, 35303), (59, 35312), (61, 35327), (73, 35405),

Gene: Roney_53 Start: 36376, Stop: 36786, Start Num: 21

Candidate Starts for Roney_53:

(20, 36373), (Start: 21 @36376 has 57 MA's), (29, 36436), (30, 36439), (32, 36460), (34, 36499), (36, 36538), (42, 36580), (46, 36613), (48, 36652), (52, 36673), (67, 36763),

Gene: Runhaar_54 Start: 36981, Stop: 37448, Start Num: 21

Candidate Starts for Runhaar_54:

(14, 36921), (Start: 21 @36981 has 57 MA's), (24, 37008), (32, 37065), (42, 37188), (45, 37218), (48, 37260), (50, 37266), (55, 37302), (61, 37326), (68, 37392), (69, 37395), (75, 37443),

Gene: Schwartz33_55 Start: 37144, Stop: 37581, Start Num: 21

Candidate Starts for Schwartz33_55:

(Start: 21 @37144 has 57 MA's), (24, 37171), (42, 37348), (45, 37378),

Gene: Secretariat_53 Start: 36006, Stop: 36494, Start Num: 21

Candidate Starts for Secretariat_53:

(16, 35955), (19, 35997), (Start: 21 @36006 has 57 MA's), (24, 36033), (25, 36045), (42, 36210), (43, 36213), (45, 36240), (63, 36360), (77, 36483),

Gene: ShaggyRogers_57 Start: 36933, Stop: 37400, Start Num: 21

Candidate Starts for ShaggyRogers_57:

(Start: 21 @36933 has 57 MA's), (22, 36945), (42, 37140), (45, 37170), (48, 37212), (55, 37254), (75, 37392),

Gene: Sunny4976_45 Start: 32761, Stop: 33207, Start Num: 21

Candidate Starts for Sunny4976_45:

(Start: 21 @32761 has 57 MA's), (28, 32818), (35, 32890), (37, 32926), (38, 32929), (40, 32944), (44, 32968), (58, 33073), (68, 33151), (70, 33157),

Gene: Tanis_53 Start: 36196, Stop: 36606, Start Num: 21

Candidate Starts for Tanis_53:

(20, 36193), (Start: 21 @36196 has 57 MA's), (29, 36256), (30, 36259), (32, 36280), (34, 36319), (36, 36358), (42, 36400), (46, 36433), (48, 36472), (52, 36493), (67, 36583),

Gene: TenaciousP_54 Start: 38556, Stop: 39014, Start Num: 21

Candidate Starts for TenaciousP_54:

(Start: 21 @38556 has 57 MA's), (22, 38568), (31, 38631), (36, 38721), (42, 38763), (45, 38793), (48, 38835), (55, 38877), (61, 38901), (73, 38979),

Gene: Tribby_44 Start: 30206, Stop: 30571, Start Num: 21

Candidate Starts for Tribby_44:

(15, 30146), (Start: 21 @30206 has 57 MA's), (33, 30308), (37, 30371), (38, 30374), (42, 30404), (47, 30437), (58, 30515),

Gene: TrixiePhattel_44 Start: 30777, Stop: 31151, Start Num: 21

Candidate Starts for TrixiePhattel_44:

(Start: 21 @30777 has 57 MA's), (28, 30834), (30, 30840), (37, 30942), (38, 30945), (47, 31008), (56, 31080),

Gene: Untouchable_55 Start: 37530, Stop: 37997, Start Num: 21

Candidate Starts for Untouchable_55:

(Start: 13 @37458 has 2 MA's), (Start: 21 @37530 has 57 MA's), (32, 37614), (42, 37737), (45, 37767), (48, 37809), (50, 37815), (55, 37851), (68, 37941), (69, 37944), (75, 37992),

Gene: Uzumaki_40 Start: 30796, Stop: 31170, Start Num: 21

Candidate Starts for Uzumaki_40:

(Start: 21 @30796 has 57 MA's), (28, 30853), (29, 30856), (30, 30859), (37, 30961), (38, 30964), (56, 31099),

Gene: Vardy_53 Start: 36877, Stop: 37338, Start Num: 21

Candidate Starts for Vardy_53:

(Start: 13 @36805 has 2 MA's), (Start: 21 @36877 has 57 MA's), (24, 36904), (32, 36961), (42, 37084), (45, 37114), (48, 37156), (50, 37162), (55, 37198), (61, 37222), (75, 37333),

Gene: Xenomorph_40 Start: 29917, Stop: 30282, Start Num: 21

Candidate Starts for Xenomorph_40:

(Start: 21 @29917 has 57 MA's), (29, 29977), (33, 30019), (37, 30082), (38, 30085), (42, 30115), (47, 30148), (58, 30226),

Gene: Zeph_56 Start: 37958, Stop: 38485, Start Num: 13

Candidate Starts for Zeph_56:

(Start: 13 @37958 has 2 MA's), (Start: 21 @38030 has 57 MA's), (32, 38114), (42, 38237), (45, 38267), (48, 38309), (68, 38429), (69, 38432), (75, 38480),