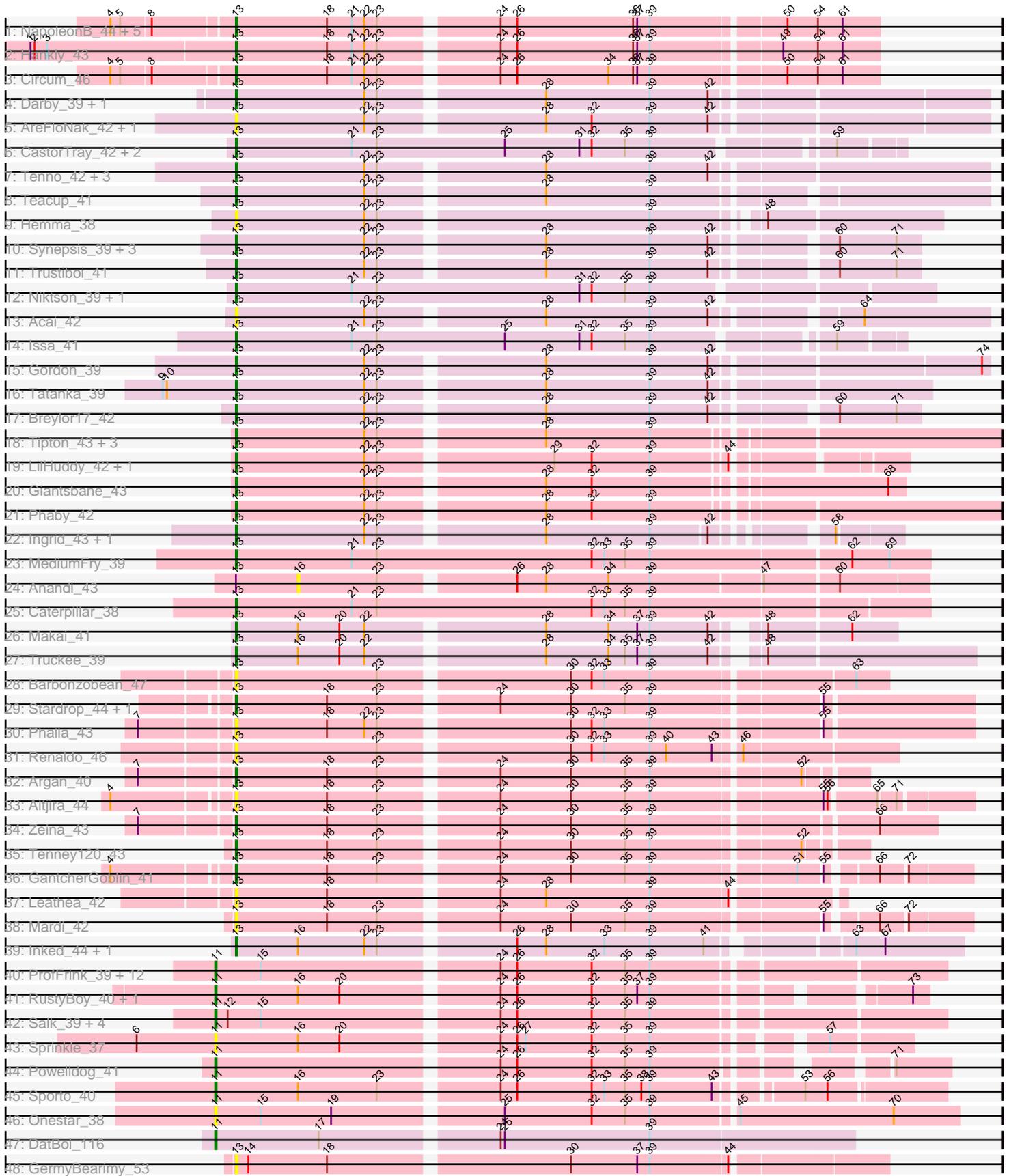# Pham 291053

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 291053 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291053 has 88 members, 23 are drafts.

Phages represented in each track:
• Track 1 : NapoleonB_44, YoshiYama_44, KeaneyLin_43, GoCrazy_43, Dynamite_44, Bowling_44
• Track 2 : Hankly_43
• Track 3 : Circum_46
• Track 4 : Darby_39, Nightmare_42
• Track 5 : AreFloNak_42, Nivinsha_42
• Track 6 : CastorTray_42, Brunswick_41, LucySwiss_40
• Track 7 : Tenno_42, CapnMurica_39, Dinallo_41, MiniBagel_41
• Track 8 : Teacup_41
• Track 9 : Hemma_38
• Track 10 : Synepsis_39, Westerlin_41, DevitoJr_40, ScienceWizSam_42
• Track 11 : Trustiboi_41
• Track 12 : Niktson_39, ElephantMan_39
• Track 13 : Acai_42
• Track 14 : Issa_41
• Track 15 : Gordon_39
• Track 16 : Tatanka_39
• Track 17 : Breylor17_42
• Track 18 : Tipton_43, Chlochlo_43, Bouchard_41, Tokki_44
• Track 19 : LilHuddy_42, Shepard_45
• Track 20 : Giantsbane_43
• Track 21 : Phaby_42
• Track 22 : Ingrid_43, Loretta_43
• Track 23 : MediumFry_39
• Track 24 : Anandi_43
• Track 25 : Caterpillar_38
• Track 26 : Makai_41
• Track 27 : Truckee_39
• Track 28 : Barbonzobean_47
• Track 29 : Stardrop_44, Navi1117_43
• Track 30 : Phaila_43
• Track 31 : Renaldo_46
• Track 32 : Argan_40
• Track 33 : Altjira_44
• Track 34 : Zeina_43
• Track 35 : Tenney120_43
• Track 36 : GantcherGoblin_41

- Track 37 : Leathea_42
- Track 38 : Mardi_42
- Track 39 : Inked_44, Zippen_43
- Track 40 : ProfFrink_39, StarLord_39, Shiba_38, Raunak_40, Boog_38, Egad_39, BronxBay_39, MrAaronian_39, Sloopyjoe_39, Michelle_39, Djungelskog_39, HerbBucket_38, Spain_40
- Track 41 : RustyBoy_40, Natasha_40
- Track 42 : Salk_39, Jeremy4pt0_39, Stayer_39, DoctorPepper_38, Linda_39
- Track 43 : Sprinkle_37
- Track 44 : Powelldog_41
- Track 45 : Sporto_40
- Track 46 : Onestar_38
- Track 47 : DatBoi_116
- Track 48 : GermyBearimy_53

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

The start number called the most often in the published annotations is 13, it was called in 46 of the 65 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Acai_42, Altjira_44, AreFloNak_42, Argan_40, Barbonzobean_47, Bouchard_41, Bowling_44, Breylor17_42, Brunswick_41, CapnMurica_39, CastorTray_42, Caterpillar_38, Chlochlo_43, Circum_46, Darby_39, DevitoJr_40, Dinallo_41, Dynamite_44, ElephantMan_39, GantcherGoblin_41, GermyBearimy_53, Giantsbane_43, GoCrazy_43, Gordon_39, Hankly_43, Hemma_38, Ingrid_43, Inked_44, Issa_41, KeaneyLin_43, Leathea_42, LilHuddy_42, Loretta_43, LucySwiss_40, Makai_41, Mardi_42, MediumFry_39, MiniBagel_41, NapoleonB_44, Navi1117_43, Nightmare_42, Niktson_39, Nivinsha_42, Phaby_42, Phaila_43, Renaldo_46, ScienceWizSam_42, Shepard_45, Stardrop_44, Synepsis_39, Tatanka_39, Teacup_41, Tenney120_43, Tenno_42, Tipton_43, Tokki_44, Truckee_39, Trustiboi_41, Westerlin_41, YoshiYama_44, Zeina_43, Zippen_43,

Genes that have the "Most Annotated" start but do not call it:
- Anandi_43,

Genes that do not have the "Most Annotated" start:
- Boog_38, BronxBay_39, DatBoi_116, Djungelskog_39, DoctorPepper_38, Egad_39, HerbBucket_38, Jeremy4pt0_39, Linda_39, Michelle_39, MrAaronian_39, Natasha_40, Onestar_38, Powelldog_41, ProfFrink_39, Raunak_40, RustyBoy_40, Salk_39, Shiba_38, Sloopyjoe_39, Spain_40, Sporto_40, Sprinkle_37, StarLord_39, Stayer_39,

Summary by start number:

Start 11:
- Found in 25 of 88 (28.4%) of genes in pham
- Manual Annotations of this start: 19 of 65
- Called 100.0% of time when present

• Phage (with cluster) where this start called: Boog_38 (AW), BronxBay_39 (AW), DatBoi_116 (DL), Djungelskog_39 (AW), DoctorPepper_38 (AW), Egad_39 (AW), HerbBucket_38 (AW), Jeremy4pt0_39 (AW), Linda_39 (AW), Michelle_39 (AW), MrAaronian_39 (AW), Natasha_40 (AW), Onestar_38 (AW), Powelldog_41 (AW), ProfFrink_39 (AW), Raunak_40 (AW), RustyBoy_40 (AW), Salk_39 (AW), Shiba_38 (AW), Sloopyjoe_39 (AW), Spain_40 (AW), Sporto_40 (AW), Sprinkle_37 (AW), StarLord_39 (AW), Stayer_39 (AW),

Start 13:
• Found in 63 of 88 (71.6%) of genes in pham
• Manual Annotations of this start: 46 of 65
• Called 98.4% of time when present
• Phage (with cluster) where this start called: Acai_42 (AU1), Altjira_44 (AU6), AreFloNak_42 (AU1), Argan_40 (AU6), Barbonzobean_47 (AU6), Bouchard_41 (AU2), Bowling_44 (AM), Breylor17_42 (AU1), Brunswick_41 (AU1), CapnMurica_39 (AU1), CastorTray_42 (AU1), Caterpillar_38 (AU4), Chlochlo_43 (AU2), Circum_46 (AM), Darby_39 (AU1), DevitoJr_40 (AU1), Dinallo_41 (AU1), Dynamite_44 (AM), ElephantMan_39 (AU1), GantcherGoblin_41 (AU6), GermyBearimy_53 (FI), Giantsbane_43 (AU2), GoCrazy_43 (AM), Gordon_39 (AU1), Hankly_43 (AM), Hemma_38 (AU1), Ingrid_43 (AU3), Inked_44 (AU7), Issa_41 (AU1), KeaneyLin_43 (AM), Leathea_42 (AU6), LilHuddy_42 (AU2), Loretta_43 (AU3), LucySwiss_40 (AU1), Makai_41 (AU5), Mardi_42 (AU6), MediumFry_39 (AU4), MiniBagel_41 (AU1), NapoleonB_44 (AM), Navi1117_43 (AU6), Nightmare_42 (AU1), Niktson_39 (AU1), Nivinsha_42 (AU1), Phaby_42 (AU2), Phaila_43 (AU6), Renaldo_46 (AU6), ScienceWizSam_42 (AU1), Shepard_45 (AU2), Stardrop_44 (AU6), Synepsis_39 (AU1), Tatanka_39 (AU1), Teacup_41 (AU1), Tenney120_43 (AU6), Tenno_42 (AU1), Tipton_43 (AU2), Tokki_44 (AU2), Truckee_39 (AU5), Trustiboi_41 (AU1), Westerlin_41 (AU1), YoshiYama_44 (AM), Zeina_43 (AU6), Zippen_43 (AU7),

Start 16:
• Found in 9 of 88 (10.2%) of genes in pham
• No Manual Annotations of this start.
• Called 11.1% of time when present
• Phage (with cluster) where this start called: Anandi_43 (AU4),

Summary by clusters:

There are 11 clusters represented in this pham: DL, AU7, AM, AU1, AU3, AU2, AU5, AU4, AW, AU6, FI,

Info for manual annotations of cluster AM:
•Start number 13 was manually annotated 7 times for cluster AM.

Info for manual annotations of cluster AU1:
•Start number 13 was manually annotated 19 times for cluster AU1.

Info for manual annotations of cluster AU2:
•Start number 13 was manually annotated 7 times for cluster AU2.

Info for manual annotations of cluster AU3:
•Start number 13 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

•Start number 13 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:
•Start number 13 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:
•Start number 13 was manually annotated 5 times for cluster AU6.

Info for manual annotations of cluster AU7:
•Start number 13 was manually annotated 2 times for cluster AU7.

Info for manual annotations of cluster AW:
•Start number 11 was manually annotated 18 times for cluster AW.

Info for manual annotations of cluster DL:
•Start number 11 was manually annotated 1 time for cluster DL.

Gene Information:

Gene: Acai_42 Start: 31913, Stop: 32422, Start Num: 13
Candidate Starts for Acai_42:
(Start: 13 @31913 has 46 MA's), (22, 32006), (23, 32015), (28, 32126), (39, 32201), (42, 32243), (64, 32333),

Gene: Altjira_44 Start: 31874, Stop: 32371, Start Num: 13
Candidate Starts for Altjira_44:
(4, 31796), (Start: 13 @31874 has 46 MA's), (18, 31940), (23, 31976), (24, 32054), (30, 32105), (35, 32144), (39, 32162), (55, 32276), (56, 32279), (65, 32309), (71, 32321),

Gene: Anandi_43 Start: 32456, Stop: 32890, Start Num: 16
Candidate Starts for Anandi_43:
(Start: 13 @32411 has 46 MA's), (16, 32456), (23, 32513), (26, 32603), (28, 32624), (34, 32669), (39, 32699), (47, 32777), (60, 32828),

Gene: AreFloNak_42 Start: 31859, Stop: 32374, Start Num: 13
Candidate Starts for AreFloNak_42:
(Start: 13 @31859 has 46 MA's), (22, 31952), (23, 31961), (28, 32072), (32, 32105), (39, 32147), (42, 32189),

Gene: Argan_40 Start: 30235, Stop: 30660, Start Num: 13
Candidate Starts for Argan_40:
(7, 30172), (Start: 13 @30235 has 46 MA's), (18, 30301), (23, 30337), (24, 30415), (30, 30466), (35, 30505), (39, 30523), (52, 30622),

Gene: Barbonzobean_47 Start: 32283, Stop: 32729, Start Num: 13
Candidate Starts for Barbonzobean_47:
(Start: 13 @32283 has 46 MA's), (23, 32385), (30, 32514), (32, 32529), (33, 32538), (39, 32571), (63, 32706),

Gene: Boog_38 Start: 29150, Stop: 29647, Start Num: 11

Candidate Starts for Boog_38:
(Start: 11 @29150 has 19 MA's), (15, 29183), (24, 29345), (26, 29357), (32, 29411), (35, 29435), (39, 29453),

Gene: Bouchard_41 Start: 32020, Stop: 32466, Start Num: 13
Candidate Starts for Bouchard_41:
(Start: 13 @32020 has 46 MA's), (22, 32113), (23, 32122), (28, 32233), (39, 32308),

Gene: Bowling_44 Start: 30182, Stop: 30625, Start Num: 13
Candidate Starts for Bowling_44:
(4, 30101), (5, 30107), (8, 30128), (Start: 13 @30182 has 46 MA's), (18, 30248), (21, 30266), (22, 30275), (23, 30284), (24, 30362), (26, 30374), (36, 30458), (37, 30461), (39, 30470), (50, 30560), (54, 30581), (61, 30599),

Gene: Breylor17_42 Start: 32693, Stop: 33154, Start Num: 13
Candidate Starts for Breylor17_42:
(Start: 13 @32693 has 46 MA's), (22, 32786), (23, 32795), (28, 32906), (39, 32981), (42, 33023), (60, 33098), (71, 33137),

Gene: BronxBay_39 Start: 29447, Stop: 29944, Start Num: 11
Candidate Starts for BronxBay_39:
(Start: 11 @29447 has 19 MA's), (15, 29480), (24, 29642), (26, 29654), (32, 29708), (35, 29732), (39, 29750),

Gene: Brunswick_41 Start: 31519, Stop: 31977, Start Num: 13
Candidate Starts for Brunswick_41:
(Start: 13 @31519 has 46 MA's), (21, 31603), (23, 31621), (25, 31714), (31, 31768), (32, 31777), (35, 31801), (39, 31819), (59, 31933),

Gene: CapnMurica_39 Start: 32622, Stop: 33140, Start Num: 13
Candidate Starts for CapnMurica_39:
(Start: 13 @32622 has 46 MA's), (22, 32715), (23, 32724), (28, 32835), (39, 32910), (42, 32952),

Gene: CastorTray_42 Start: 32244, Stop: 32702, Start Num: 13
Candidate Starts for CastorTray_42:
(Start: 13 @32244 has 46 MA's), (21, 32328), (23, 32346), (25, 32439), (31, 32493), (32, 32502), (35, 32526), (39, 32544), (59, 32658),

Gene: Caterpillar_38 Start: 31053, Stop: 31547, Start Num: 13
Candidate Starts for Caterpillar_38:
(Start: 13 @31053 has 46 MA's), (21, 31137), (23, 31155), (32, 31311), (33, 31320), (35, 31335), (39, 31353),

Gene: Chlochlo_43 Start: 32054, Stop: 32506, Start Num: 13
Candidate Starts for Chlochlo_43:
(Start: 13 @32054 has 46 MA's), (22, 32147), (23, 32156), (28, 32267), (39, 32342),

Gene: Circum_46 Start: 30820, Stop: 31263, Start Num: 13
Candidate Starts for Circum_46:
(4, 30739), (5, 30745), (8, 30766), (Start: 13 @30820 has 46 MA's), (18, 30886), (21, 30904), (22, 30913), (23, 30922), (24, 31000), (26, 31012), (34, 31078), (36, 31096), (37, 31099), (39, 31108), (50, 31198), (54, 31219), (61, 31237),

Gene: Darby_39 Start: 31365, Stop: 31880, Start Num: 13
Candidate Starts for Darby_39:
(Start: 13 @31365 has 46 MA's), (22, 31458), (23, 31467), (28, 31578), (39, 31653), (42, 31695),

Gene: DatBoi_116 Start: 73558, Stop: 74007, Start Num: 11
Candidate Starts for DatBoi_116:
(Start: 11 @73558 has 19 MA's), (17, 73633), (24, 73753), (25, 73756), (39, 73861),

Gene: DevitoJr_40 Start: 31863, Stop: 32324, Start Num: 13
Candidate Starts for DevitoJr_40:
(Start: 13 @31863 has 46 MA's), (22, 31956), (23, 31965), (28, 32076), (39, 32151), (42, 32193), (60, 32268), (71, 32307),

Gene: Dinallo_41 Start: 32931, Stop: 33449, Start Num: 13
Candidate Starts for Dinallo_41:
(Start: 13 @32931 has 46 MA's), (22, 33024), (23, 33033), (28, 33144), (39, 33219), (42, 33261),

Gene: Djungelskog_39 Start: 29447, Stop: 29944, Start Num: 11
Candidate Starts for Djungelskog_39:
(Start: 11 @29447 has 19 MA's), (15, 29480), (24, 29642), (26, 29654), (32, 29708), (35, 29732), (39, 29750),

Gene: DoctorPepper_38 Start: 29149, Stop: 29646, Start Num: 11
Candidate Starts for DoctorPepper_38:
(Start: 11 @29149 has 19 MA's), (12, 29158), (15, 29182), (24, 29344), (26, 29356), (32, 29410), (35, 29434), (39, 29452),

Gene: Dynamite_44 Start: 30372, Stop: 30815, Start Num: 13
Candidate Starts for Dynamite_44:
(4, 30291), (5, 30297), (8, 30318), (Start: 13 @30372 has 46 MA's), (18, 30438), (21, 30456), (22, 30465), (23, 30474), (24, 30552), (26, 30564), (36, 30648), (37, 30651), (39, 30660), (50, 30750), (54, 30771), (61, 30789),

Gene: Egad_39 Start: 29448, Stop: 29945, Start Num: 11
Candidate Starts for Egad_39:
(Start: 11 @29448 has 19 MA's), (15, 29481), (24, 29643), (26, 29655), (32, 29709), (35, 29733), (39, 29751),

Gene: ElephantMan_39 Start: 32062, Stop: 32550, Start Num: 13
Candidate Starts for ElephantMan_39:
(Start: 13 @32062 has 46 MA's), (21, 32146), (23, 32164), (31, 32311), (32, 32320), (35, 32344), (39, 32362),

Gene: GantcherGoblin_41 Start: 30686, Stop: 31177, Start Num: 13
Candidate Starts for GantcherGoblin_41:
(4, 30608), (Start: 13 @30686 has 46 MA's), (18, 30752), (23, 30788), (24, 30866), (30, 30917), (35, 30956), (39, 30974), (51, 31070), (55, 31085), (66, 31115), (72, 31133),

Gene: GermyBearimy_53 Start: 33293, Stop: 33739, Start Num: 13
Candidate Starts for GermyBearimy_53:
(Start: 13 @33293 has 46 MA's), (14, 33302), (18, 33359), (30, 33524), (37, 33572), (39, 33581), (44, 33635),

Gene: Giantsbane_43 Start: 31240, Stop: 31692, Start Num: 13
Candidate Starts for Giantsbane_43:
(Start: 13 @31240 has 46 MA's), (22, 31333), (23, 31342), (28, 31453), (32, 31486), (39, 31528), (68, 31681),

Gene: GoCrazy_43 Start: 30298, Stop: 30741, Start Num: 13
Candidate Starts for GoCrazy_43:
(4, 30217), (5, 30223), (8, 30244), (Start: 13 @30298 has 46 MA's), (18, 30364), (21, 30382), (22, 30391), (23, 30400), (24, 30478), (26, 30490), (36, 30574), (37, 30577), (39, 30586), (50, 30676), (54, 30697), (61, 30715),

Gene: Gordon_39 Start: 32650, Stop: 33165, Start Num: 13
Candidate Starts for Gordon_39:
(Start: 13 @32650 has 46 MA's), (22, 32743), (23, 32752), (28, 32863), (39, 32938), (42, 32980), (74, 33160),

Gene: Hankly_43 Start: 29599, Stop: 30042, Start Num: 13
Candidate Starts for Hankly_43:
(1, 29452), (2, 29455), (3, 29464), (Start: 13 @29599 has 46 MA's), (18, 29665), (21, 29683), (22, 29692), (23, 29701), (24, 29779), (26, 29791), (36, 29875), (37, 29878), (39, 29887), (49, 29974), (54, 29998), (61, 30016),

Gene: Hemma_38 Start: 28711, Stop: 29187, Start Num: 13
Candidate Starts for Hemma_38:
(Start: 13 @28711 has 46 MA's), (22, 28804), (23, 28813), (39, 28999), (48, 29065),

Gene: HerbBucket_38 Start: 29149, Stop: 29646, Start Num: 11
Candidate Starts for HerbBucket_38:
(Start: 11 @29149 has 19 MA's), (15, 29182), (24, 29344), (26, 29356), (32, 29410), (35, 29434), (39, 29452),

Gene: Ingrid_43 Start: 31998, Stop: 32435, Start Num: 13
Candidate Starts for Ingrid_43:
(Start: 13 @31998 has 46 MA's), (22, 32091), (23, 32100), (28, 32211), (39, 32286), (42, 32325), (58, 32391),

Gene: Inked_44 Start: 32908, Stop: 33399, Start Num: 13
Candidate Starts for Inked_44:
(Start: 13 @32908 has 46 MA's), (16, 32953), (22, 33001), (23, 33010), (26, 33100), (28, 33121), (33, 33163), (39, 33196), (41, 33235), (63, 33322), (67, 33343),

Gene: Issa_41 Start: 31974, Stop: 32432, Start Num: 13
Candidate Starts for Issa_41:
(Start: 13 @31974 has 46 MA's), (21, 32058), (23, 32076), (25, 32169), (31, 32223), (32, 32232), (35, 32256), (39, 32274), (59, 32388),

Gene: Jeremy4pt0_39 Start: 29144, Stop: 29641, Start Num: 11
Candidate Starts for Jeremy4pt0_39:
(Start: 11 @29144 has 19 MA's), (12, 29153), (15, 29177), (24, 29339), (26, 29351), (32, 29405), (35, 29429), (39, 29447),

Gene: KeaneyLin_43 Start: 30298, Stop: 30741, Start Num: 13
Candidate Starts for KeaneyLin_43:

(4, 30217), (5, 30223), (8, 30244), (Start: 13 @30298 has 46 MA's), (18, 30364), (21, 30382), (22, 30391), (23, 30400), (24, 30478), (26, 30490), (36, 30574), (37, 30577), (39, 30586), (50, 30676), (54, 30697), (61, 30715),

Gene: Leathea_42 Start: 30450, Stop: 30863, Start Num: 13
Candidate Starts for Leathea_42:
(Start: 13 @30450 has 46 MA's), (18, 30516), (24, 30630), (28, 30663), (39, 30738), (44, 30792),

Gene: LilHuddy_42 Start: 32005, Stop: 32451, Start Num: 13
Candidate Starts for LilHuddy_42:
(Start: 13 @32005 has 46 MA's), (22, 32098), (23, 32107), (29, 32224), (32, 32251), (39, 32293), (44, 32344),

Gene: Linda_39 Start: 29442, Stop: 29939, Start Num: 11
Candidate Starts for Linda_39:
(Start: 11 @29442 has 19 MA's), (12, 29451), (15, 29475), (24, 29637), (26, 29649), (32, 29703), (35, 29727), (39, 29745),

Gene: Loretta_43 Start: 31998, Stop: 32435, Start Num: 13
Candidate Starts for Loretta_43:
(Start: 13 @31998 has 46 MA's), (22, 32091), (23, 32100), (28, 32211), (39, 32286), (42, 32325), (58, 32391),

Gene: LucySwiss_40 Start: 31434, Stop: 31892, Start Num: 13
Candidate Starts for LucySwiss_40:
(Start: 13 @31434 has 46 MA's), (21, 31518), (23, 31536), (25, 31629), (31, 31683), (32, 31692), (35, 31716), (39, 31734), (59, 31848),

Gene: Makai_41 Start: 32217, Stop: 32660, Start Num: 13
Candidate Starts for Makai_41:
(Start: 13 @32217 has 46 MA's), (16, 32262), (20, 32292), (22, 32310), (28, 32430), (34, 32475), (37, 32496), (39, 32505), (42, 32547), (48, 32571), (62, 32628),

Gene: Mardi_42 Start: 30773, Stop: 31264, Start Num: 13
Candidate Starts for Mardi_42:
(Start: 13 @30773 has 46 MA's), (18, 30839), (23, 30875), (24, 30953), (30, 31004), (35, 31043), (39, 31061), (55, 31172), (66, 31202), (72, 31220),

Gene: MediumFry_39 Start: 31366, Stop: 31863, Start Num: 13
Candidate Starts for MediumFry_39:
(Start: 13 @31366 has 46 MA's), (21, 31450), (23, 31468), (32, 31624), (33, 31633), (35, 31648), (39, 31666), (62, 31807), (69, 31834),

Gene: Michelle_39 Start: 29447, Stop: 29944, Start Num: 11
Candidate Starts for Michelle_39:
(Start: 11 @29447 has 19 MA's), (15, 29480), (24, 29642), (26, 29654), (32, 29708), (35, 29732), (39, 29750),

Gene: MiniBagel_41 Start: 32604, Stop: 33122, Start Num: 13
Candidate Starts for MiniBagel_41:
(Start: 13 @32604 has 46 MA's), (22, 32697), (23, 32706), (28, 32817), (39, 32892), (42, 32934),

Gene: MrAaronian_39 Start: 29447, Stop: 29944, Start Num: 11

Candidate Starts for MrAaronian_39:
(Start: 11 @29447 has 19 MA's), (15, 29480), (24, 29642), (26, 29654), (32, 29708), (35, 29732), (39, 29750),

Gene: NapoleonB_44 Start: 30372, Stop: 30815, Start Num: 13
Candidate Starts for NapoleonB_44:
(4, 30291), (5, 30297), (8, 30318), (Start: 13 @30372 has 46 MA's), (18, 30438), (21, 30456), (22, 30465), (23, 30474), (24, 30552), (26, 30564), (36, 30648), (37, 30651), (39, 30660), (50, 30750), (54, 30771), (61, 30789),

Gene: Natasha_40 Start: 28972, Stop: 29439, Start Num: 11
Candidate Starts for Natasha_40:
(Start: 11 @28972 has 19 MA's), (16, 29032), (20, 29062), (24, 29167), (26, 29179), (32, 29233), (35, 29257), (37, 29266), (39, 29275), (73, 29428),

Gene: Navi1117_43 Start: 31102, Stop: 31581, Start Num: 13
Candidate Starts for Navi1117_43:
(Start: 13 @31102 has 46 MA's), (18, 31168), (23, 31204), (24, 31282), (30, 31333), (35, 31372), (39, 31390), (55, 31504),

Gene: Nightmare_42 Start: 32534, Stop: 33052, Start Num: 13
Candidate Starts for Nightmare_42:
(Start: 13 @32534 has 46 MA's), (22, 32627), (23, 32636), (28, 32747), (39, 32822), (42, 32864),

Gene: Niktson_39 Start: 32062, Stop: 32550, Start Num: 13
Candidate Starts for Niktson_39:
(Start: 13 @32062 has 46 MA's), (21, 32146), (23, 32164), (31, 32311), (32, 32320), (35, 32344), (39, 32362),

Gene: Nivinsha_42 Start: 31859, Stop: 32374, Start Num: 13
Candidate Starts for Nivinsha_42:
(Start: 13 @31859 has 46 MA's), (22, 31952), (23, 31961), (28, 32072), (32, 32105), (39, 32147), (42, 32189),

Gene: Onestar_38 Start: 28908, Stop: 29426, Start Num: 11
Candidate Starts for Onestar_38:
(Start: 11 @28908 has 19 MA's), (15, 28941), (19, 28992), (25, 29106), (32, 29169), (35, 29193), (39, 29211), (45, 29268), (70, 29379),

Gene: Phaby_42 Start: 32029, Stop: 32550, Start Num: 13
Candidate Starts for Phaby_42:
(Start: 13 @32029 has 46 MA's), (22, 32122), (23, 32131), (28, 32242), (32, 32275), (39, 32317),

Gene: Phaila_43 Start: 30560, Stop: 31063, Start Num: 13
Candidate Starts for Phaila_43:
(7, 30497), (Start: 13 @30560 has 46 MA's), (18, 30626), (22, 30653), (23, 30662), (30, 30791), (32, 30806), (33, 30815), (39, 30848), (55, 30959),

Gene: Powelldog_41 Start: 29507, Stop: 29983, Start Num: 11
Candidate Starts for Powelldog_41:
(Start: 11 @29507 has 19 MA's), (24, 29702), (26, 29714), (32, 29768), (35, 29792), (39, 29810), (71, 29945),

Gene: ProfFrink_39 Start: 29447, Stop: 29944, Start Num: 11
Candidate Starts for ProfFrink_39:
(Start: 11 @29447 has 19 MA's), (15, 29480), (24, 29642), (26, 29654), (32, 29708), (35, 29732), (39, 29750),

Gene: Raunak_40 Start: 29144, Stop: 29641, Start Num: 11
Candidate Starts for Raunak_40:
(Start: 11 @29144 has 19 MA's), (15, 29177), (24, 29339), (26, 29351), (32, 29405), (35, 29429), (39, 29447),

Gene: Renaldo_46 Start: 32321, Stop: 32773, Start Num: 13
Candidate Starts for Renaldo_46:
(Start: 13 @32321 has 46 MA's), (23, 32423), (30, 32552), (32, 32567), (33, 32576), (39, 32609), (40, 32621), (43, 32654), (46, 32669),

Gene: RustyBoy_40 Start: 28953, Stop: 29420, Start Num: 11
Candidate Starts for RustyBoy_40:
(Start: 11 @28953 has 19 MA's), (16, 29013), (20, 29043), (24, 29148), (26, 29160), (32, 29214), (35, 29238), (37, 29247), (39, 29256), (73, 29409),

Gene: Salk_39 Start: 29442, Stop: 29939, Start Num: 11
Candidate Starts for Salk_39:
(Start: 11 @29442 has 19 MA's), (12, 29451), (15, 29475), (24, 29637), (26, 29649), (32, 29703), (35, 29727), (39, 29745),

Gene: ScienceWizSam_42 Start: 32182, Stop: 32643, Start Num: 13
Candidate Starts for ScienceWizSam_42:
(Start: 13 @32182 has 46 MA's), (22, 32275), (23, 32284), (28, 32395), (39, 32470), (42, 32512), (60, 32587), (71, 32626),

Gene: Shepard_45 Start: 32289, Stop: 32735, Start Num: 13
Candidate Starts for Shepard_45:
(Start: 13 @32289 has 46 MA's), (22, 32382), (23, 32391), (29, 32508), (32, 32535), (39, 32577), (44, 32628),

Gene: Shiba_38 Start: 29144, Stop: 29641, Start Num: 11
Candidate Starts for Shiba_38:
(Start: 11 @29144 has 19 MA's), (15, 29177), (24, 29339), (26, 29351), (32, 29405), (35, 29429), (39, 29447),

Gene: Sloopyjoe_39 Start: 29448, Stop: 29945, Start Num: 11
Candidate Starts for Sloopyjoe_39:
(Start: 11 @29448 has 19 MA's), (15, 29481), (24, 29643), (26, 29655), (32, 29709), (35, 29733), (39, 29751),

Gene: Spain_40 Start: 29447, Stop: 29944, Start Num: 11
Candidate Starts for Spain_40:
(Start: 11 @29447 has 19 MA's), (15, 29480), (24, 29642), (26, 29654), (32, 29708), (35, 29732), (39, 29750),

Gene: Sporto_40 Start: 30692, Stop: 31183, Start Num: 11
Candidate Starts for Sporto_40:

(Start: 11 @30692 has 19 MA's), (16, 30752), (23, 30809), (24, 30887), (26, 30899), (32, 30953), (33, 30962), (35, 30977), (38, 30989), (39, 30995), (43, 31040), (53, 31091), (56, 31106),

Gene: Sprinkle_37 Start: 29052, Stop: 29510, Start Num: 11
Candidate Starts for Sprinkle_37:
(6, 28995), (Start: 11 @29052 has 19 MA's), (16, 29112), (20, 29142), (24, 29247), (26, 29259), (27, 29265), (32, 29313), (35, 29337), (39, 29355), (57, 29457),

Gene: StarLord_39 Start: 29448, Stop: 29945, Start Num: 11
Candidate Starts for StarLord_39:
(Start: 11 @29448 has 19 MA's), (15, 29481), (24, 29643), (26, 29655), (32, 29709), (35, 29733), (39, 29751),

Gene: Stardrop_44 Start: 31119, Stop: 31622, Start Num: 13
Candidate Starts for Stardrop_44:
(Start: 13 @31119 has 46 MA's), (18, 31185), (23, 31221), (24, 31299), (30, 31350), (35, 31389), (39, 31407), (55, 31518),

Gene: Stayer_39 Start: 29442, Stop: 29939, Start Num: 11
Candidate Starts for Stayer_39:
(Start: 11 @29442 has 19 MA's), (12, 29451), (15, 29475), (24, 29637), (26, 29649), (32, 29703), (35, 29727), (39, 29745),

Gene: Synepsis_39 Start: 31848, Stop: 32309, Start Num: 13
Candidate Starts for Synepsis_39:
(Start: 13 @31848 has 46 MA's), (22, 31941), (23, 31950), (28, 32061), (39, 32136), (42, 32178), (60, 32253), (71, 32292),

Gene: Tatanka_39 Start: 32005, Stop: 32481, Start Num: 13
Candidate Starts for Tatanka_39:
(9, 31954), (10, 31957), (Start: 13 @32005 has 46 MA's), (22, 32098), (23, 32107), (28, 32218), (39, 32293), (42, 32335),

Gene: Teacup_41 Start: 31988, Stop: 32497, Start Num: 13
Candidate Starts for Teacup_41:
(Start: 13 @31988 has 46 MA's), (22, 32081), (23, 32090), (28, 32201), (39, 32276),

Gene: Tenney120_43 Start: 31029, Stop: 31454, Start Num: 13
Candidate Starts for Tenney120_43:
(Start: 13 @31029 has 46 MA's), (18, 31095), (23, 31131), (24, 31209), (30, 31260), (35, 31299), (39, 31317), (52, 31416),

Gene: Tenno_42 Start: 32612, Stop: 33130, Start Num: 13
Candidate Starts for Tenno_42:
(Start: 13 @32612 has 46 MA's), (22, 32705), (23, 32714), (28, 32825), (39, 32900), (42, 32942),

Gene: Tipton_43 Start: 32323, Stop: 32844, Start Num: 13
Candidate Starts for Tipton_43:
(Start: 13 @32323 has 46 MA's), (22, 32416), (23, 32425), (28, 32536), (39, 32611),

Gene: Tokki_44 Start: 31975, Stop: 32496, Start Num: 13
Candidate Starts for Tokki_44:
(Start: 13 @31975 has 46 MA's), (22, 32068), (23, 32077), (28, 32188), (39, 32263),

Gene: Truckee_39 Start: 31923, Stop: 32423, Start Num: 13
Candidate Starts for Truckee_39:
(Start: 13 @31923 has 46 MA's), (16, 31968), (20, 31998), (22, 32016), (28, 32136), (34, 32181), (35, 32193), (37, 32202), (39, 32211), (42, 32253), (48, 32277),

Gene: Trustiboi_41 Start: 32399, Stop: 32860, Start Num: 13
Candidate Starts for Trustiboi_41:
(Start: 13 @32399 has 46 MA's), (22, 32492), (23, 32501), (28, 32612), (39, 32687), (42, 32729), (60, 32804), (71, 32843),

Gene: Westerlin_41 Start: 33490, Stop: 33951, Start Num: 13
Candidate Starts for Westerlin_41:
(Start: 13 @33490 has 46 MA's), (22, 33583), (23, 33592), (28, 33703), (39, 33778), (42, 33820), (60, 33895), (71, 33934),

Gene: YoshiYama_44 Start: 30404, Stop: 30847, Start Num: 13
Candidate Starts for YoshiYama_44:
(4, 30323), (5, 30329), (8, 30350), (Start: 13 @30404 has 46 MA's), (18, 30470), (21, 30488), (22, 30497), (23, 30506), (24, 30584), (26, 30596), (36, 30680), (37, 30683), (39, 30692), (50, 30782), (54, 30803), (61, 30821),

Gene: Zeina_43 Start: 31010, Stop: 31486, Start Num: 13
Candidate Starts for Zeina_43:
(7, 30947), (Start: 13 @31010 has 46 MA's), (18, 31076), (23, 31112), (24, 31190), (30, 31241), (35, 31280), (39, 31298), (66, 31445),

Gene: Zippen_43 Start: 32785, Stop: 33276, Start Num: 13
Candidate Starts for Zippen_43:
(Start: 13 @32785 has 46 MA's), (16, 32830), (22, 32878), (23, 32887), (26, 32977), (28, 32998), (33, 33040), (39, 33073), (41, 33112), (63, 33199), (67, 33220),