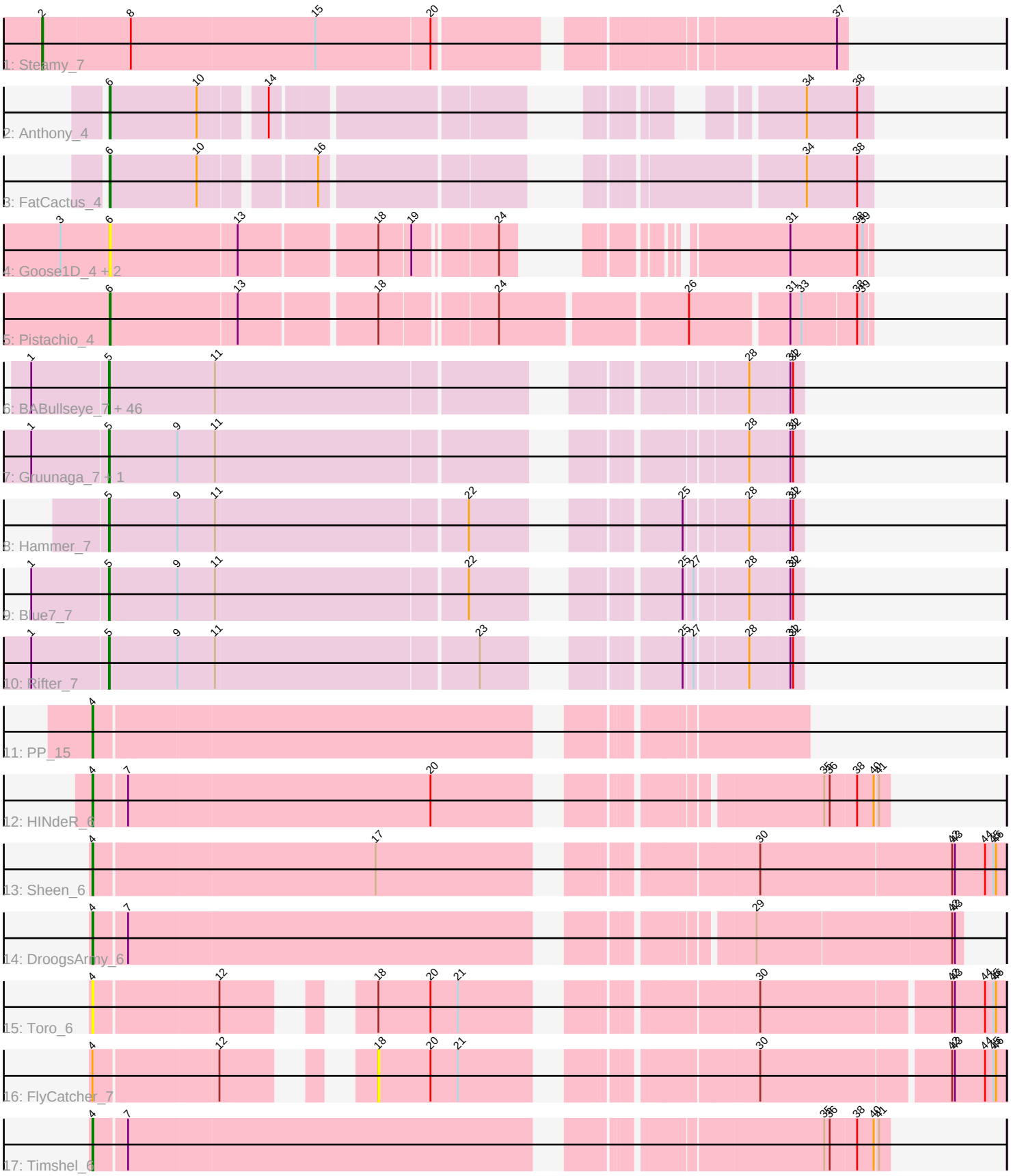
Pham 347596


1: Steamy_7
2: Anthony_4
3: FatCactus_4
4: Goose1D_4 + 2
5: Pistachio_4
6: BABullseye_7 + 46
7: Gruunaga_7 + 1
8: Hammer_7
9: Blue7_7
10: Rifter_7
11: PP_15
12: HINdeR_6
13: Sheen_6
14: DroogsArmy_6
15: Toro_6
16: FlyCatcher_7
17: Timshel_6

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 347596 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347596 has 66 members, 7 are drafts.

Phages represented in each track:
• Track 1 : Steamy_7
• Track 2 : Anthony_4
• Track 3 : FatCactus_4
• Track 4 : Goose1D_4, Shep_4, Goose1X_4
• Track 5 : Pistachio_4
• Track 6 : BABullseye_7, SmellyB_7, Jeffabunny_7, Dorothea_7, Isiphiwo_7, Indra_7, Kipper29_7, Koko_7, Artemis2UCLA_7, Priamo_7, DaVinci_7, Helmet_7, DelvinSonDorr_6, Hexamo_7, Yokurt_7, Jordennis_7, EricB_7, Zaka_7, Blinn1_7, Roksolana_7, Imbriano_7, Temprado_7, VohminGhazi_7, ToneTone_6, Cookiedough_7, Zulu_7, CloudWang3_7, SuperAwesome_7, Pmask_7, Candra_7, Garak_7, Hoot_7, Lilbunny_7, WunderPhul_7, GreedyLawyer_7, Polyphemus_7, Wiks_7, Kazan_7, Tucker_7, JewelBug_7, BlessJoy_7, Chartreuse_7, BennyP_7, SuperCallie99_7, Neeharika16_7, McFly_7, Newrala_7
• Track 7 : Gruunaga_7, Gladiator_7
• Track 8 : Hammer_7
• Track 9 : Blue7_7
• Track 10 : Rifter_7
• Track 11 : PP_15
• Track 12 : HINdeR_6
• Track 13 : Sheen_6
• Track 14 : DroogsArmy_6
• Track 15 : Toro_6
• Track 16 : FlyCatcher_7
• Track 17 : Timshel_6

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

The start number called the most often in the published annotations is 5, it was called in 50 of the 59 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Artemis2UCLA_7, BABullseye_7, BennyP_7, BlessJoy_7, Blinn1_7, Blue7_7, Candra_7, Chartreuse_7, CloudWang3_7, Cookiedough_7, DaVinci_7, DelvinSonDorr_6, Dorothea_7, EricB_7, Garak_7, Gladiator_7, GreedyLawyer_7,

Gruunaga_7, Hammer_7, Helmet_7, Hexamo_7, Hoot_7, Imbriano_7, Indra_7, Isiphiwo_7, Jeffabunny_7, JewelBug_7, Jordennis_7, Kazan_7, Kipper29_7, Koko_7, Lilbunny_7, McFly_7, Neeharika16_7, Newrala_7, Pmask_7, Polyphemus_7, Priamo_7, Rifter_7, Roksolana_7, SmellyB_7, SuperAwesome_7, SuperCallie99_7, Temprado_7, ToneTone_6, Tucker_7, VohminGhazi_7, Wiks_7, WunderPhul_7, Yokurt_7, Zaka_7, Zulu_7,

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

Genes that do not have the "Most Annotated" start:
• Anthony_4, DroogsArmy_6, FatCactus_4, FlyCatcher_7, Goose1D_4, Goose1X_4, HINdeR_6, PP_15, Pistachio_4, Sheen_6, Shep_4, Steamy_7, Timshel_6, Toro_6,

Summary by start number:

Start 2:
• Found in 1 of 66 (1.5%) of genes in pham
• Manual Annotations of this start: 1 of 59
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Steamy_7 (A12),

Start 4:
• Found in 7 of 66 (10.6%) of genes in pham
• Manual Annotations of this start: 5 of 59
• Called 85.7% of time when present
• Phage (with cluster) where this start called: DroogsArmy_6 (A7), HINdeR_6 (A7), PP_15 (A7), Sheen_6 (A7), Timshel_6 (A7), Toro_6 (A7),

Start 5:
• Found in 52 of 66 (78.8%) of genes in pham
• Manual Annotations of this start: 50 of 59
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Artemis2UCLA_7 (A6), BABullseye_7 (A6), BennyP_7 (A6), BlessJoy_7 (A6), Blinn1_7 (A6), Blue7_7 (A6), Candra_7 (A6), Chartreuse_7 (A6), CloudWang3_7 (A6), Cookiedough_7 (A6), DaVinci_7 (A6), DelvinSonDorr_6 (A6), Dorothea_7 (A6), EricB_7 (A6), Garak_7 (A6), Gladiator_7 (A6), GreedyLawyer_7 (A6), Gruunaga_7 (A6), Hammer_7 (A6), Helmet_7 (A6), Hexamo_7 (A6), Hoot_7 (A6), Imbriano_7 (A6), Indra_7 (A6), Isiphiwo_7 (A6), Jeffabunny_7 (A6), JewelBug_7 (A6), Jordennis_7 (A6), Kazan_7 (A6), Kipper29_7 (A6), Koko_7 (A6), Lilbunny_7 (A6), McFly_7 (A6), Neeharika16_7 (A6), Newrala_7 (A6), Pmask_7 (A6), Polyphemus_7 (A6), Priamo_7 (A6), Rifter_7 (A6), Roksolana_7 (A6), SmellyB_7 (A6), SuperAwesome_7 (A6), SuperCallie99_7 (A6), Temprado_7 (A6), ToneTone_6 (A6), Tucker_7 (A6), VohminGhazi_7 (A6), Wiks_7 (A6), WunderPhul_7 (A6), Yokurt_7 (A6), Zaka_7 (A6), Zulu_7 (A6),

Start 6:
• Found in 6 of 66 (9.1%) of genes in pham
• Manual Annotations of this start: 3 of 59
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Anthony_4 (A20), FatCactus_4 (A20), Goose1D_4 (A3), Goose1X_4 (A3), Pistachio_4 (A3), Shep_4 (A3),

Start 18:
• Found in 6 of 66 (9.1%) of genes in pham
• No Manual Annotations of this start.
• Called 16.7% of time when present
• Phage (with cluster) where this start called: FlyCatcher_7 (A7),

Summary by clusters:

There are 5 clusters represented in this pham: A20, A3, A12, A7, A6,

Info for manual annotations of cluster A12:
•Start number 2 was manually annotated 1 time for cluster A12.

Info for manual annotations of cluster A20:
•Start number 6 was manually annotated 2 times for cluster A20.

Info for manual annotations of cluster A3:
•Start number 6 was manually annotated 1 time for cluster A3.

Info for manual annotations of cluster A6:
•Start number 5 was manually annotated 50 times for cluster A6.

Info for manual annotations of cluster A7:
•Start number 4 was manually annotated 5 times for cluster A7.

Gene Information:

Gene: Anthony_4 Start: 2193, Stop: 2843, Start Num: 6
Candidate Starts for Anthony_4:
(Start: 6 @2193 has 3 MA's), (10, 2286), (14, 2346), (34, 2772), (38, 2826),

Gene: Artemis2UCLA_7 Start: 3999, Stop: 4547, Start Num: 5
Candidate Starts for Artemis2UCLA_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4491), (31, 4533), (32, 4536),

Gene: BABullseye_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for BABullseye_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: BennyP_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for BennyP_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: BlessJoy_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for BlessJoy_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Blinn1_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Blinn1_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Blue7_7 Start: 3993, Stop: 4658, Start Num: 5
Candidate Starts for Blue7_7:
(1, 3912), (Start: 5 @3993 has 50 MA's), (9, 4065), (11, 4104), (22, 4371), (25, 4539), (27, 4548), (28, 4602), (31, 4644), (32, 4647),

Gene: Candra_7 Start: 4032, Stop: 4697, Start Num: 5
Candidate Starts for Candra_7:
(1, 3951), (Start: 5 @4032 has 50 MA's), (11, 4143), (28, 4641), (31, 4683), (32, 4686),

Gene: Chartreuse_7 Start: 4000, Stop: 4611, Start Num: 5
Candidate Starts for Chartreuse_7:
(1, 3919), (Start: 5 @4000 has 50 MA's), (11, 4111), (28, 4555), (31, 4597), (32, 4600),

Gene: CloudWang3_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for CloudWang3_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Cookiedough_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Cookiedough_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: DaVinci_7 Start: 4000, Stop: 4665, Start Num: 5
Candidate Starts for DaVinci_7:
(1, 3919), (Start: 5 @4000 has 50 MA's), (11, 4111), (28, 4609), (31, 4651), (32, 4654),

Gene: DelvinSonDorr_6 Start: 4001, Stop: 4666, Start Num: 5
Candidate Starts for DelvinSonDorr_6:
(1, 3920), (Start: 5 @4001 has 50 MA's), (11, 4112), (28, 4610), (31, 4652), (32, 4655),

Gene: Dorothea_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Dorothea_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: DroogsArmy_6 Start: 3592, Stop: 4452, Start Num: 4
Candidate Starts for DroogsArmy_6:
(Start: 4 @3592 has 5 MA's), (7, 3625), (29, 4234), (42, 4441), (43, 4444),

Gene: EricB_7 Start: 4000, Stop: 4665, Start Num: 5
Candidate Starts for EricB_7:
(1, 3919), (Start: 5 @4000 has 50 MA's), (11, 4111), (28, 4609), (31, 4651), (32, 4654),

Gene: FatCactus_4 Start: 2188, Stop: 2883, Start Num: 6
Candidate Starts for FatCactus_4:
(Start: 6 @2188 has 3 MA's), (10, 2281), (16, 2386), (34, 2812), (38, 2866),

Gene: FlyCatcher_7 Start: 3819, Stop: 4430, Start Num: 18
Candidate Starts for FlyCatcher_7:
(Start: 4 @3588 has 5 MA's), (12, 3717), (18, 3819), (20, 3876), (21, 3906), (30, 4173), (42, 4371), (43, 4374), (44, 4407), (45, 4416), (46, 4419),

Gene: Garak_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Garak_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Gladiator_7 Start: 3993, Stop: 4658, Start Num: 5
Candidate Starts for Gladiator_7:
(1, 3912), (Start: 5 @3993 has 50 MA's), (9, 4065), (11, 4104), (28, 4602), (31, 4644), (32, 4647),

Gene: Goose1D_4 Start: 1605, Stop: 2279, Start Num: 6
Candidate Starts for Goose1D_4:
(3, 1551), (Start: 6 @1605 has 3 MA's), (13, 1740), (18, 1878), (19, 1911), (24, 1992), (31, 2193), (38, 2265), (39, 2271),

Gene: Goose1X_4 Start: 1605, Stop: 2351, Start Num: 6
Candidate Starts for Goose1X_4:
(3, 1551), (Start: 6 @1605 has 3 MA's), (13, 1740), (18, 1878), (19, 1911), (24, 1992), (31, 2265), (38, 2337), (39, 2343),

Gene: GreedyLawyer_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for GreedyLawyer_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Gruunaga_7 Start: 3993, Stop: 4658, Start Num: 5
Candidate Starts for Gruunaga_7:
(1, 3912), (Start: 5 @3993 has 50 MA's), (9, 4065), (11, 4104), (28, 4602), (31, 4644), (32, 4647),

Gene: HINdeR_6 Start: 3588, Stop: 4367, Start Num: 4
Candidate Starts for HINdeR_6:
(Start: 4 @3588 has 5 MA's), (7, 3621), (20, 3948), (35, 4302), (36, 4308), (38, 4335), (40, 4353), (41, 4356),

Gene: Hammer_7 Start: 3993, Stop: 4658, Start Num: 5
Candidate Starts for Hammer_7:
(Start: 5 @3993 has 50 MA's), (9, 4065), (11, 4104), (22, 4371), (25, 4539), (28, 4602), (31, 4644), (32, 4647),

Gene: Helmet_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Helmet_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Hexamo_7 Start: 3999, Stop: 4619, Start Num: 5
Candidate Starts for Hexamo_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4563), (31, 4605), (32, 4608),

Gene: Hoot_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Hoot_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Imbriano_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Imbriano_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Indra_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Indra_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Isiphiwo_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Isiphiwo_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Jeffabunny_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Jeffabunny_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: JewelBug_7 Start: 4000, Stop: 4665, Start Num: 5
Candidate Starts for JewelBug_7:
(1, 3919), (Start: 5 @4000 has 50 MA's), (11, 4111), (28, 4609), (31, 4651), (32, 4654),

Gene: Jordennis_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Jordennis_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Kazan_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Kazan_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Kipper29_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Kipper29_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Koko_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Koko_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Lilbunny_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Lilbunny_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: McFly_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for McFly_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Neeharika16_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Neeharika16_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Newrala_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Newrala_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: PP_15 Start: 6781, Stop: 7488, Start Num: 4
Candidate Starts for PP_15:
(Start: 4 @6781 has 5 MA's),

Gene: Pistachio_4 Start: 1612, Stop: 2373, Start Num: 6
Candidate Starts for Pistachio_4:
(Start: 6 @1612 has 3 MA's), (13, 1747), (18, 1885), (24, 1999), (26, 2188), (31, 2290), (33, 2302), (38, 2359), (39, 2365),

Gene: Pmask_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Pmask_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Polyphemus_7 Start: 4001, Stop: 4666, Start Num: 5
Candidate Starts for Polyphemus_7:
(1, 3920), (Start: 5 @4001 has 50 MA's), (11, 4112), (28, 4610), (31, 4652), (32, 4655),

Gene: Priamo_7 Start: 4014, Stop: 4679, Start Num: 5
Candidate Starts for Priamo_7:
(1, 3933), (Start: 5 @4014 has 50 MA's), (11, 4125), (28, 4623), (31, 4665), (32, 4668),

Gene: Rifter_7 Start: 3992, Stop: 4657, Start Num: 5
Candidate Starts for Rifter_7:
(1, 3911), (Start: 5 @3992 has 50 MA's), (9, 4064), (11, 4103), (23, 4382), (25, 4538), (27, 4547), (28, 4601), (31, 4643), (32, 4646),

Gene: Roksolana_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Roksolana_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Sheen_6 Start: 3589, Stop: 4512, Start Num: 4
Candidate Starts for Sheen_6:
(Start: 4 @3589 has 5 MA's), (17, 3889), (30, 4246), (42, 4453), (43, 4456), (44, 4489), (45, 4498), (46, 4501),

Gene: Shep_4 Start: 1605, Stop: 2279, Start Num: 6
Candidate Starts for Shep_4:
(3, 1551), (Start: 6 @1605 has 3 MA's), (13, 1740), (18, 1878), (19, 1911), (24, 1992), (31, 2193), (38, 2265), (39, 2271),

Gene: SmellyB_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for SmellyB_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Steamy_7 Start: 4480, Stop: 5295, Start Num: 2
Candidate Starts for Steamy_7:
(Start: 2 @4480 has 1 MA's), (8, 4573), (15, 4771), (20, 4894), (37, 5284),

Gene: SuperAwesome_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for SuperAwesome_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: SuperCallie99_7 Start: 4000, Stop: 4665, Start Num: 5
Candidate Starts for SuperCallie99_7:
(1, 3919), (Start: 5 @4000 has 50 MA's), (11, 4111), (28, 4609), (31, 4651), (32, 4654),

Gene: Temprado_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Temprado_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Timshel_6 Start: 3592, Stop: 4380, Start Num: 4
Candidate Starts for Timshel_6:

(Start: 4 @3592 has 5 MA's), (7, 3625), (35, 4315), (36, 4321), (38, 4348), (40, 4366), (41, 4369),

Gene: ToneTone_6 Start: 3999, Stop: 4574, Start Num: 5
Candidate Starts for ToneTone_6:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4518), (31, 4560), (32, 4563),

Gene: Toro_6 Start: 3588, Stop: 4430, Start Num: 4
Candidate Starts for Toro_6:
(Start: 4 @3588 has 5 MA's), (12, 3717), (18, 3819), (20, 3876), (21, 3906), (30, 4173), (42, 4371), (43, 4374), (44, 4407), (45, 4416), (46, 4419),

Gene: Tucker_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Tucker_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: VohminGhazi_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for VohminGhazi_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Wiks_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Wiks_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: WunderPhul_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for WunderPhul_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Yokurt_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Yokurt_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Zaka_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Zaka_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),

Gene: Zulu_7 Start: 3999, Stop: 4664, Start Num: 5
Candidate Starts for Zulu_7:
(1, 3918), (Start: 5 @3999 has 50 MA's), (11, 4110), (28, 4608), (31, 4650), (32, 4653),