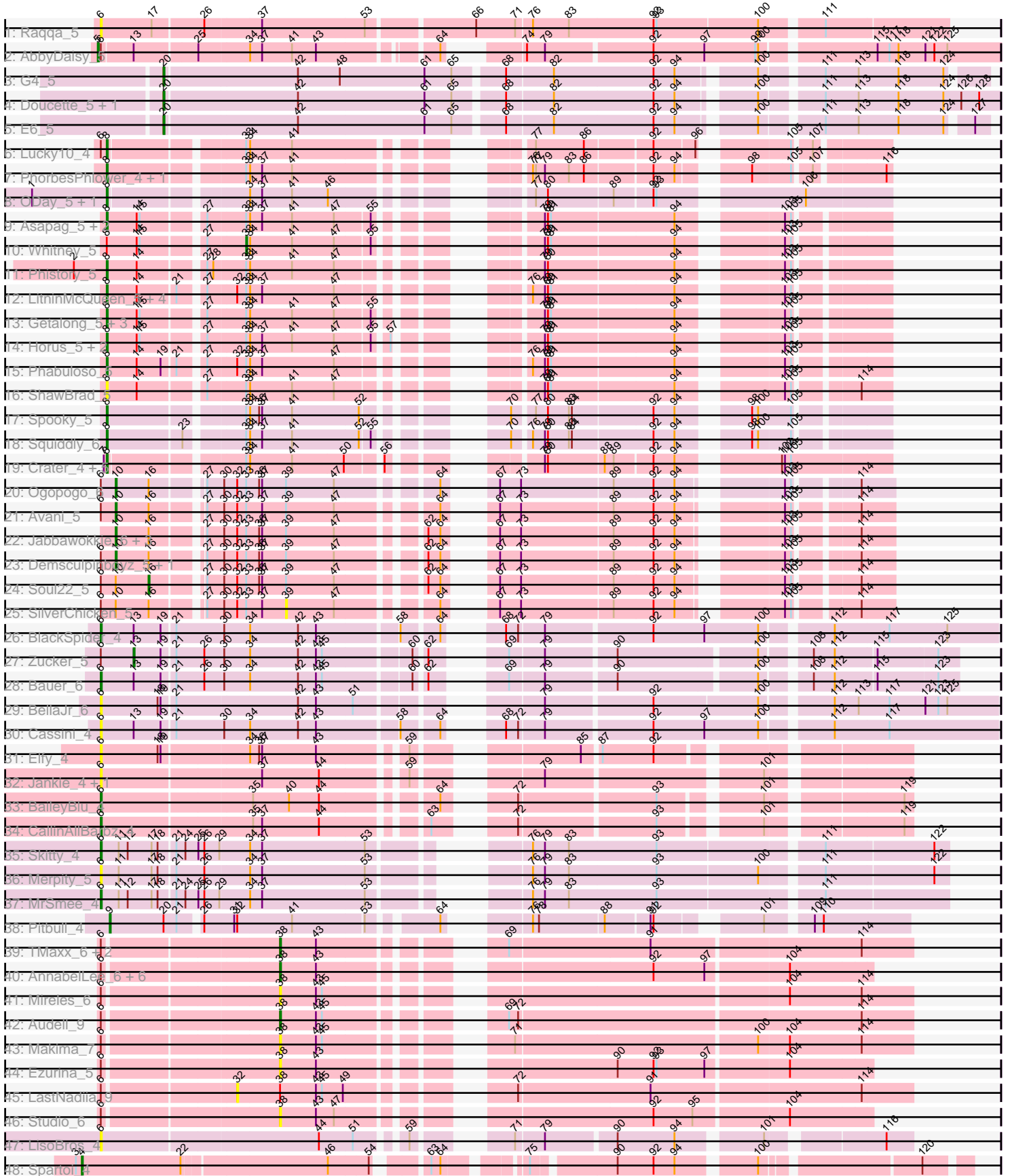


Pham 294658



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 294658 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294658 has 80 members, 25 are drafts.

Phages represented in each track:

- Track 1 : Raqqa_5
- Track 2 : AbbyDaisy_5
- Track 3 : G4_5
- Track 4 : Doucette_5, B22_5
- Track 5 : E6_5
- Track 6 : Lucky10_4
- Track 7 : PhorbesPhlower_4, Morkie_4
- Track 8 : ODay_5, Ecliptus_5
- Track 9 : Asapag_5, BotCity_5, BENtherdunthat_5
- Track 10 : Whitney_5
- Track 11 : Phistory_5
- Track 12 : LitninMcQueen_5, Kamaru_5, Budski_5, CheeseTouch_5, Holliday_5
- Track 13 : Getalong_5, Lutum_5, Periwinkle_5, Kenna_5
- Track 14 : Horus_5, Leroy_5, Frickyeah_5
- Track 15 : Phabuloso_5
- Track 16 : ShawBrad_5
- Track 17 : Spooky_5
- Track 18 : Squiddly_6
- Track 19 : Crater_4, Apricot_4, BearBQ_4, Kuwabara_4, MortyNRick_4, Birdsong_4
- Track 20 : Ogopogo_6
- Track 21 : Avani_5
- Track 22 : Jabbawokkie_6, Yoshi_5, Zapner_6, Che9d_5
- Track 23 : Demsculpinboyz_5, Blarby_6
- Track 24 : Soul22_5
- Track 25 : SilverChicken_5
- Track 26 : BlackSpider_4
- Track 27 : Zucker_5
- Track 28 : Bauer_6
- Track 29 : BellaJr_6
- Track 30 : Cassini_4
- Track 31 : Elfy_4
- Track 32 : Jankie_4, GrimEater_4
- Track 33 : BaileyBlu_4
- Track 34 : CallinAllBarbz_4
- Track 35 : Skitty_4
- Track 36 : Merpity_5
- Track 37 : MrSmee_4

- Track 38 : Pitbull_4
- Track 39 : TMaxx_6, Agamoto_8, TripleC_9
- Track 40 : AnnabelLee_6, ChamoyPickle_6, Gerri43_6, ChipsNGuac_6, Neuville_6, Roberts_6, CardboardBox_6
- Track 41 : Mireles_6
- Track 42 : Audell_9
- Track 43 : Makima_7
- Track 44 : Ezurina_5
- Track 45 : LastNadiia_9
- Track 46 : Studio_6
- Track 47 : LisoBros_4
- Track 48 : Spartoi_4

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

The start number called the most often in the published annotations is 8, it was called in 29 of the 55 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Apricot_4, Asapag_5, BENtherdunthat_5, BearBQ_4, Birdsong_4, BotCity_5, Budski_5, CheeseTouch_5, Crater_4, Ecliptus_5, Frickyeah_5, Getalong_5, Holliday_5, Horus_5, Kamaru_5, Kenna_5, Kuwabara_4, Leroy_5, LitninMcQueen_5, Lucky10_4, Lutum_5, Morkie_4, MortyNRick_4, ODay_5, Periwinkle_5, Phabuloso_5, Phistory_5, PhorbesPhlower_4, ShawBrad_5, Spooky_5, Squiddly_6,

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

- Whitney_5,

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

- AbbyDaisy_5, Agamoto_8, AnnabelLee_6, Audell_9, Avani_5, B22_5, BaileyBlu_4, Bauer_6, BellaJr_6, BlackSpider_4, Blarby_6, CallinAllBarbz_4, CardboardBox_6, Cassini_4, ChamoyPickle_6, Che9d_5, ChipsNGuac_6, Demsculpinboyz_5, Doucette_5, E6_5, Elfy_4, Ezurina_5, G4_5, Gerri43_6, GrimEater_4, Jabbawokkie_6, Jankie_4, LastNadiia_9, LisoBros_4, Makima_7, Merpity_5, Mireles_6, MrSmee_4, Neuville_6, Ogopogo_6, Pitbull_4, Raqqa_5, Roberts_6, SilverChicken_5, Skitty_4, Soul22_5, Spartoi_4, Studio_6, TMaxx_6, TripleC_9, Yoshi_5, Zapner_6, Zucker_5,

Summary by start number:

Start 4:

- Found in 1 of 80 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Spartoi_4 (singleton),

Start 5:

- Found in 1 of 80 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present

- Phage (with cluster) where this start called: AbbyDaisy_5 (AY),

Start 6:

- Found in 39 of 80 (48.8%) of genes in pham
- Manual Annotations of this start: 6 of 55
- Called 35.9% of time when present
- Phage (with cluster) where this start called: BaileyBlu_4 (FP), Bauer_6 (FN), BellaJr_6 (FN), BlackSpider_4 (FN), CallinAllBarbz_4 (FP), Cassini_4 (FN), Elfy_4 (FP), GrimEater_4 (FP), Jankie_4 (FP), LisoBros_4 (UNK), Merpity_5 (FQ), MrSmee_4 (FQ), Raqqa_5 (AY), Skitty_4 (FQ),

Start 8:

- Found in 32 of 80 (40.0%) of genes in pham
- Manual Annotations of this start: 29 of 55
- Called 96.9% of time when present
- Phage (with cluster) where this start called: Apricot_4 (DN3), Asapag_5 (DN1), BENTherdunthat_5 (DN1), BearBQ_4 (DN), Birdsong_4 (DN), BotCity_5 (DN), Budski_5 (DN), CheeseTouch_5 (DN1), Crater_4 (DN3), Ecliptus_5 (DN), Frickyeah_5 (DN1), Getalong_5 (DN1), Holliday_5 (DN1), Horus_5 (DN1), Kamaru_5 (DN1), Kenna_5 (DN1), Kuwabara_4 (DN4), Leroy_5 (DN1), LitninMcQueen_5 (DN1), Lucky10_4 (DH), Lutum_5 (DN1), Morkie_4 (DH), MortyNRick_4 (DN), ODay_5 (DN), Periwinkle_5 (DN1), Phabuloso_5 (DN1), Phistory_5 (DN1), PhorbesPhlower_4 (DH), ShawBrad_5 (DN1), Spooky_5 (DN2), Squiddly_6 (DN2),

Start 9:

- Found in 1 of 80 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pitbull_4 (FQ),

Start 10:

- Found in 10 of 80 (12.5%) of genes in pham
- Manual Annotations of this start: 7 of 55
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Avani_5 (F2), Blarby_6 (F), Che9d_5 (F2), Demsculpinboyz_5 (F2), Jabbawokkie_6 (F2), Ogopogo_6 (F1), Yoshi_5 (F2), Zapner_6 (F2),

Start 13:

- Found in 5 of 80 (6.2%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Zucker_5 (FN),

Start 16:

- Found in 10 of 80 (12.5%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Soul22_5 (F2),

Start 20:

- Found in 5 of 80 (6.2%) of genes in pham
- Manual Annotations of this start: 4 of 55

- Called 80.0% of time when present
- Phage (with cluster) where this start called: B22_5 (BW), Doucette_5 (BW), E6_5 (BW), G4_5 (BW),

Start 32:

- Found in 18 of 80 (22.5%) of genes in pham
- No Manual Annotations of this start.
- Called 5.6% of time when present
- Phage (with cluster) where this start called: LastNadiia_9 (FR),

Start 33:

- Found in 40 of 80 (50.0%) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 2.5% of time when present
- Phage (with cluster) where this start called: Whitney_5 (DN1),

Start 38:

- Found in 16 of 80 (20.0%) of genes in pham
- Manual Annotations of this start: 3 of 55
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Agamoto_8 (FR), AnnabelleLee_6 (FR), Audell_9 (FR), CardboardBox_6 (FR), ChamoyPickle_6 (FR), ChipsNGuac_6 (FR), Ezurina_5 (FR), Gerri43_6 (FR), Makima_7 (FR), Mireles_6 (FR), Neuville_6 (FR), Roberts_6 (FR), Studio_6 (FR), TMaxx_6 (FR), TripleC_9 (FR),

Start 39:

- Found in 10 of 80 (12.5%) of genes in pham
- No Manual Annotations of this start.
- Called 10.0% of time when present
- Phage (with cluster) where this start called: SilverChicken_5 (F2),

Summary by clusters:

There are 17 clusters represented in this pham: DN, FQ, FR, DH, F, F2, FP, F1, DN4, BW, DN1, DN3, DN2, AY, singleton, UNK, FN,

Info for manual annotations of cluster AY:

- Start number 5 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster BW:

- Start number 20 was manually annotated 4 times for cluster BW.

Info for manual annotations of cluster DH:

- Start number 8 was manually annotated 3 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 8 was manually annotated 7 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 8 was manually annotated 14 times for cluster DN1.
- Start number 33 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 8 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 8 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 8 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster F1:

- Start number 10 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 10 was manually annotated 6 times for cluster F2.
- Start number 16 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster FN:

- Start number 6 was manually annotated 2 times for cluster FN.
- Start number 13 was manually annotated 1 time for cluster FN.

Info for manual annotations of cluster FP:

- Start number 6 was manually annotated 2 times for cluster FP.

Info for manual annotations of cluster FQ:

- Start number 6 was manually annotated 2 times for cluster FQ.
- Start number 9 was manually annotated 1 time for cluster FQ.

Info for manual annotations of cluster FR:

- Start number 38 was manually annotated 3 times for cluster FR.

Gene Information:

Gene: AbbyDaisy_5 Start: 3558, Stop: 4358, Start Num: 5

Candidate Starts for AbbyDaisy_5:

(Start: 5 @3558 has 1 MA's), (Start: 6 @3561 has 6 MA's), (Start: 13 @3591 has 1 MA's), (25, 3651), (34, 3699), (37, 3711), (41, 3741), (43, 3765), (64, 3867), (74, 3909), (79, 3927), (92, 4029), (97, 4080), (99, 4131), (100, 4134), (115, 4236), (117, 4248), (118, 4257), (121, 4284), (122, 4293), (125, 4305),

Gene: Agamoto_8 Start: 7462, Stop: 8025, Start Num: 38

Candidate Starts for Agamoto_8:

(Start: 6 @7297 has 6 MA's), (Start: 38 @7462 has 3 MA's), (43, 7498), (69, 7633), (91, 7771), (114, 7975),

Gene: AnnabelLee_6 Start: 4338, Stop: 4859, Start Num: 38

Candidate Starts for AnnabelLee_6:

(Start: 6 @4173 has 6 MA's), (Start: 38 @4338 has 3 MA's), (43, 4374), (92, 4650), (97, 4701), (104, 4779),

Gene: Apricot_4 Start: 3576, Stop: 4232, Start Num: 8

Candidate Starts for Apricot_4:

(7, 3573), (Start: 8 @3576 has 29 MA's), (Start: 33 @3696 has 1 MA's), (34, 3699), (41, 3741), (50, 3792), (56, 3822), (79, 3918), (80, 3921), (88, 3975), (89, 3984), (92, 4020), (94, 4041), (102, 4125), (103, 4128), (105, 4134),

Gene: Asapag_5 Start: 3599, Stop: 4243, Start Num: 8

Candidate Starts for Asapag_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (15, 3632), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (37, 3737), (41, 3767), (47, 3809), (55, 3842), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160),

Gene: Audell_9 Start: 7732, Stop: 8295, Start Num: 38

Candidate Starts for Audell_9:

(Start: 6 @7567 has 6 MA's), (Start: 38 @7732 has 3 MA's), (43, 7768), (45, 7774), (69, 7903), (72, 7912), (114, 8245),

Gene: Avani_5 Start: 3585, Stop: 4229, Start Num: 10

Candidate Starts for Avani_5:

(Start: 6 @3570 has 6 MA's), (Start: 10 @3585 has 7 MA's), (Start: 16 @3618 has 1 MA's), (27, 3660), (30, 3675), (32, 3687), (Start: 33 @3696 has 1 MA's), (37, 3711), (39, 3735), (47, 3783), (64, 3864), (67, 3885), (73, 3906), (89, 3996), (92, 4035), (94, 4056), (103, 4137), (105, 4143), (114, 4197),

Gene: B22_5 Start: 3905, Stop: 4687, Start Num: 20

Candidate Starts for B22_5:

(Start: 20 @3905 has 4 MA's), (42, 4034), (61, 4157), (65, 4184), (68, 4229), (82, 4274), (92, 4373), (94, 4394), (100, 4460), (111, 4514), (113, 4547), (118, 4586), (124, 4631), (126, 4649), (128, 4667),

Gene: BENtherdunthat_5 Start: 3599, Stop: 4243, Start Num: 8

Candidate Starts for BENtherdunthat_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (15, 3632), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (37, 3737), (41, 3767), (47, 3809), (55, 3842), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160),

Gene: BaileyBlu_4 Start: 3397, Stop: 4089, Start Num: 6

Candidate Starts for BaileyBlu_4:

(Start: 6 @3397 has 6 MA's), (35, 3541), (40, 3577), (44, 3607), (64, 3703), (72, 3745), (93, 3874), (101, 3961), (119, 4081),

Gene: Bauer_6 Start: 4443, Stop: 5192, Start Num: 6

Candidate Starts for Bauer_6:

(Start: 6 @4443 has 6 MA's), (Start: 13 @4476 has 1 MA's), (19, 4503), (21, 4515), (26, 4542), (30, 4560), (34, 4584), (42, 4632), (43, 4650), (45, 4656), (60, 4737), (62, 4746), (69, 4785), (79, 4818), (90, 4884), (100, 5016), (108, 5055), (112, 5076), (115, 5115), (123, 5172),

Gene: BearBQ_4 Start: 3576, Stop: 4232, Start Num: 8

Candidate Starts for BearBQ_4:

(7, 3573), (Start: 8 @3576 has 29 MA's), (Start: 33 @3696 has 1 MA's), (34, 3699), (41, 3741), (50, 3792), (56, 3822), (79, 3918), (80, 3921), (88, 3975), (89, 3984), (92, 4020), (94, 4041), (102, 4125), (103, 4128), (105, 4134),

Gene: BellaJr_6 Start: 4447, Stop: 5247, Start Num: 6

Candidate Starts for BellaJr_6:

(Start: 6 @4447 has 6 MA's), (18, 4504), (19, 4507), (21, 4519), (42, 4636), (43, 4654), (51, 4690), (79, 4822), (92, 4924), (100, 5026), (112, 5086), (113, 5110), (117, 5140), (121, 5176), (123, 5188), (125,

5197),

Gene: Birdsong_4 Start: 3576, Stop: 4232, Start Num: 8

Candidate Starts for Birdsong_4:

(7, 3573), (Start: 8 @3576 has 29 MA's), (Start: 33 @3696 has 1 MA's), (34, 3699), (41, 3741), (50, 3792), (56, 3822), (79, 3918), (80, 3921), (88, 3975), (89, 3984), (92, 4020), (94, 4041), (102, 4125), (103, 4128), (105, 4134),

Gene: BlackSpider_4 Start: 3452, Stop: 4255, Start Num: 6

Candidate Starts for BlackSpider_4:

(Start: 6 @3452 has 6 MA's), (Start: 13 @3485 has 1 MA's), (19, 3512), (21, 3524), (30, 3569), (34, 3593), (42, 3641), (43, 3659), (58, 3734), (64, 3767), (68, 3791), (72, 3803), (79, 3827), (92, 3929), (97, 3980), (100, 4034), (112, 4094), (117, 4148), (125, 4205),

Gene: Blarby_6 Start: 4110, Stop: 4754, Start Num: 10

Candidate Starts for Blarby_6:

(Start: 6 @4095 has 6 MA's), (Start: 10 @4110 has 7 MA's), (Start: 16 @4143 has 1 MA's), (27, 4185), (30, 4200), (32, 4212), (Start: 33 @4221 has 1 MA's), (36, 4233), (37, 4236), (39, 4260), (47, 4308), (62, 4377), (64, 4389), (67, 4410), (73, 4431), (89, 4521), (92, 4560), (94, 4581), (103, 4662), (105, 4668), (114, 4722),

Gene: BotCity_5 Start: 3597, Stop: 4241, Start Num: 8

Candidate Starts for BotCity_5:

(Start: 8 @3597 has 29 MA's), (14, 3627), (15, 3630), (27, 3684), (Start: 33 @3720 has 1 MA's), (34, 3723), (37, 3735), (41, 3765), (47, 3807), (55, 3840), (79, 3942), (80, 3945), (81, 3948), (94, 4068), (103, 4152), (105, 4158),

Gene: Budski_5 Start: 3597, Stop: 4241, Start Num: 8

Candidate Starts for Budski_5:

(Start: 8 @3597 has 29 MA's), (14, 3627), (21, 3663), (27, 3684), (32, 3711), (Start: 33 @3720 has 1 MA's), (34, 3723), (37, 3735), (47, 3807), (76, 3930), (79, 3942), (80, 3945), (81, 3948), (94, 4068), (103, 4152), (105, 4158),

Gene: CallinAllBarbz_4 Start: 3399, Stop: 4091, Start Num: 6

Candidate Starts for CallinAllBarbz_4:

(Start: 6 @3399 has 6 MA's), (35, 3543), (37, 3552), (44, 3609), (63, 3696), (72, 3747), (93, 3876), (101, 3963), (119, 4083),

Gene: CardboardBox_6 Start: 4338, Stop: 4859, Start Num: 38

Candidate Starts for CardboardBox_6:

(Start: 6 @4173 has 6 MA's), (Start: 38 @4338 has 3 MA's), (43, 4374), (92, 4650), (97, 4701), (104, 4779),

Gene: Cassini_4 Start: 3417, Stop: 4220, Start Num: 6

Candidate Starts for Cassini_4:

(Start: 6 @3417 has 6 MA's), (Start: 13 @3450 has 1 MA's), (19, 3477), (21, 3489), (30, 3534), (34, 3558), (42, 3606), (43, 3624), (58, 3699), (64, 3732), (68, 3756), (72, 3768), (79, 3792), (92, 3894), (97, 3945), (100, 3999), (112, 4059), (117, 4113),

Gene: ChamoyPickle_6 Start: 4338, Stop: 4859, Start Num: 38

Candidate Starts for ChamoyPickle_6:

(Start: 6 @4173 has 6 MA's), (Start: 38 @4338 has 3 MA's), (43, 4374), (92, 4650), (97, 4701), (104, 4779),

Gene: Che9d_5 Start: 3595, Stop: 4239, Start Num: 10

Candidate Starts for Che9d_5:

(Start: 10 @3595 has 7 MA's), (Start: 16 @3628 has 1 MA's), (27, 3670), (30, 3685), (32, 3697), (Start: 33 @3706 has 1 MA's), (36, 3718), (37, 3721), (39, 3745), (47, 3793), (62, 3862), (64, 3874), (67, 3895), (73, 3916), (89, 4006), (92, 4045), (94, 4066), (103, 4147), (105, 4153), (114, 4207),

Gene: CheeseTouch_5 Start: 3597, Stop: 4241, Start Num: 8

Candidate Starts for CheeseTouch_5:

(Start: 8 @3597 has 29 MA's), (14, 3627), (21, 3663), (27, 3684), (32, 3711), (Start: 33 @3720 has 1 MA's), (34, 3723), (37, 3735), (47, 3807), (76, 3930), (79, 3942), (80, 3945), (81, 3948), (94, 4068), (103, 4152), (105, 4158),

Gene: ChipsNGuac_6 Start: 4338, Stop: 4859, Start Num: 38

Candidate Starts for ChipsNGuac_6:

(Start: 6 @4173 has 6 MA's), (Start: 38 @4338 has 3 MA's), (43, 4374), (92, 4650), (97, 4701), (104, 4779),

Gene: Crater_4 Start: 3576, Stop: 4232, Start Num: 8

Candidate Starts for Crater_4:

(7, 3573), (Start: 8 @3576 has 29 MA's), (Start: 33 @3696 has 1 MA's), (34, 3699), (41, 3741), (50, 3792), (56, 3822), (79, 3918), (80, 3921), (88, 3975), (89, 3984), (92, 4020), (94, 4041), (102, 4125), (103, 4128), (105, 4134),

Gene: Demsculpinboyz_5 Start: 3586, Stop: 4230, Start Num: 10

Candidate Starts for Demsculpinboyz_5:

(Start: 6 @3571 has 6 MA's), (Start: 10 @3586 has 7 MA's), (Start: 16 @3619 has 1 MA's), (27, 3661), (30, 3676), (32, 3688), (Start: 33 @3697 has 1 MA's), (36, 3709), (37, 3712), (39, 3736), (47, 3784), (62, 3853), (64, 3865), (67, 3886), (73, 3907), (89, 3997), (92, 4036), (94, 4057), (103, 4138), (105, 4144), (114, 4198),

Gene: Doucette_5 Start: 3905, Stop: 4690, Start Num: 20

Candidate Starts for Doucette_5:

(Start: 20 @3905 has 4 MA's), (42, 4034), (61, 4160), (65, 4187), (68, 4232), (82, 4277), (92, 4376), (94, 4397), (100, 4463), (111, 4517), (113, 4550), (118, 4589), (124, 4634), (126, 4652), (128, 4670),

Gene: E6_5 Start: 3906, Stop: 4670, Start Num: 20

Candidate Starts for E6_5:

(Start: 20 @3906 has 4 MA's), (42, 4035), (61, 4161), (65, 4188), (68, 4233), (82, 4278), (92, 4377), (94, 4398), (100, 4464), (111, 4518), (113, 4551), (118, 4590), (124, 4635), (127, 4656),

Gene: Ecliptus_5 Start: 3608, Stop: 4267, Start Num: 8

Candidate Starts for Ecliptus_5:

(1, 3533), (Start: 8 @3608 has 29 MA's), (34, 3731), (37, 3743), (41, 3773), (46, 3809), (77, 3944), (80, 3956), (89, 4019), (92, 4055), (93, 4058), (106, 4184),

Gene: Elfy_4 Start: 3431, Stop: 4123, Start Num: 6

Candidate Starts for Elfy_4:

(Start: 6 @3431 has 6 MA's), (18, 3488), (19, 3491), (34, 3572), (36, 3581), (37, 3584), (43, 3638), (59, 3713), (85, 3839), (87, 3854), (92, 3905),

Gene: Ezurina_5 Start: 3952, Stop: 4473, Start Num: 38

Candidate Starts for Ezurina_5:

(Start: 6 @3787 has 6 MA's), (Start: 38 @3952 has 3 MA's), (43, 3988), (90, 4228), (92, 4264), (93, 4267), (97, 4315), (104, 4393),

Gene: Frickyeah_5 Start: 3599, Stop: 4243, Start Num: 8

Candidate Starts for Frickyeah_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (15, 3632), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (37, 3737), (41, 3767), (47, 3809), (55, 3842), (57, 3854), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160),

Gene: G4_5 Start: 3905, Stop: 4669, Start Num: 20

Candidate Starts for G4_5:

(Start: 20 @3905 has 4 MA's), (42, 4034), (48, 4076), (61, 4160), (65, 4187), (68, 4232), (82, 4277), (92, 4376), (94, 4397), (100, 4463), (111, 4517), (113, 4550), (118, 4589), (124, 4634),

Gene: Gerri43_6 Start: 4338, Stop: 4859, Start Num: 38

Candidate Starts for Gerri43_6:

(Start: 6 @4173 has 6 MA's), (Start: 38 @4338 has 3 MA's), (43, 4374), (92, 4650), (97, 4701), (104, 4779),

Gene: Getalong_5 Start: 3599, Stop: 4243, Start Num: 8

Candidate Starts for Getalong_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (15, 3632), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (41, 3767), (47, 3809), (55, 3842), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160),

Gene: GrimEater_4 Start: 3409, Stop: 4107, Start Num: 6

Candidate Starts for GrimEater_4:

(Start: 6 @3409 has 6 MA's), (37, 3562), (44, 3619), (59, 3691), (79, 3781), (101, 3979),

Gene: Holliday_5 Start: 3597, Stop: 4241, Start Num: 8

Candidate Starts for Holliday_5:

(Start: 8 @3597 has 29 MA's), (14, 3627), (21, 3663), (27, 3684), (32, 3711), (Start: 33 @3720 has 1 MA's), (34, 3723), (37, 3735), (47, 3807), (76, 3930), (79, 3942), (80, 3945), (81, 3948), (94, 4068), (103, 4152), (105, 4158),

Gene: Horus_5 Start: 3599, Stop: 4243, Start Num: 8

Candidate Starts for Horus_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (15, 3632), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (37, 3737), (41, 3767), (47, 3809), (55, 3842), (57, 3854), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160),

Gene: Jabbawokkie_6 Start: 4109, Stop: 4753, Start Num: 10

Candidate Starts for Jabbawokkie_6:

(Start: 10 @4109 has 7 MA's), (Start: 16 @4142 has 1 MA's), (27, 4184), (30, 4199), (32, 4211), (Start: 33 @4220 has 1 MA's), (36, 4232), (37, 4235), (39, 4259), (47, 4307), (62, 4376), (64, 4388), (67, 4409), (73, 4430), (89, 4520), (92, 4559), (94, 4580), (103, 4661), (105, 4667), (114, 4721),

Gene: Jankie_4 Start: 3408, Stop: 4106, Start Num: 6

Candidate Starts for Jankie_4:

(Start: 6 @3408 has 6 MA's), (37, 3561), (44, 3618), (59, 3690), (79, 3780), (101, 3978),

Gene: Kamaru_5 Start: 3597, Stop: 4241, Start Num: 8

Candidate Starts for Kamaru_5:

(Start: 8 @3597 has 29 MA's), (14, 3627), (21, 3663), (27, 3684), (32, 3711), (Start: 33 @3720 has 1 MA's), (34, 3723), (37, 3735), (47, 3807), (76, 3930), (79, 3942), (80, 3945), (81, 3948), (94, 4068), (103, 4152), (105, 4158),

Gene: Kenna_5 Start: 3599, Stop: 4243, Start Num: 8

Candidate Starts for Kenna_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (15, 3632), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (41, 3767), (47, 3809), (55, 3842), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160),

Gene: Kuwabara_4 Start: 3576, Stop: 4232, Start Num: 8

Candidate Starts for Kuwabara_4:

(7, 3573), (Start: 8 @3576 has 29 MA's), (Start: 33 @3696 has 1 MA's), (34, 3699), (41, 3741), (50, 3792), (56, 3822), (79, 3918), (80, 3921), (88, 3975), (89, 3984), (92, 4020), (94, 4041), (102, 4125), (103, 4128), (105, 4134),

Gene: LastNadiia_9 Start: 6642, Stop: 7247, Start Num: 32

Candidate Starts for LastNadiia_9:

(Start: 6 @6519 has 6 MA's), (32, 6642), (Start: 38 @6684 has 3 MA's), (43, 6720), (45, 6726), (49, 6747), (72, 6864), (91, 6993), (114, 7197),

Gene: Leroy_5 Start: 3600, Stop: 4244, Start Num: 8

Candidate Starts for Leroy_5:

(Start: 8 @3600 has 29 MA's), (14, 3630), (15, 3633), (27, 3687), (Start: 33 @3723 has 1 MA's), (34, 3726), (37, 3738), (41, 3768), (47, 3810), (55, 3843), (57, 3855), (79, 3945), (80, 3948), (81, 3951), (94, 4071), (103, 4155), (105, 4161),

Gene: LisoBros_4 Start: 3605, Stop: 4303, Start Num: 6

Candidate Starts for LisoBros_4:

(Start: 6 @3605 has 6 MA's), (44, 3815), (51, 3848), (59, 3887), (71, 3950), (79, 3977), (90, 4043), (94, 4100), (101, 4175), (116, 4277),

Gene: LitninMcQueen_5 Start: 3597, Stop: 4241, Start Num: 8

Candidate Starts for LitninMcQueen_5:

(Start: 8 @3597 has 29 MA's), (14, 3627), (21, 3663), (27, 3684), (32, 3711), (Start: 33 @3720 has 1 MA's), (34, 3723), (37, 3735), (47, 3807), (76, 3930), (79, 3942), (80, 3945), (81, 3948), (94, 4068), (103, 4152), (105, 4158),

Gene: Lucky10_4 Start: 3151, Stop: 3789, Start Num: 8

Candidate Starts for Lucky10_4:

(Start: 6 @3145 has 6 MA's), (Start: 8 @3151 has 29 MA's), (Start: 33 @3271 has 1 MA's), (34, 3274), (41, 3316), (77, 3487), (86, 3535), (92, 3598), (96, 3637), (105, 3706), (107, 3721),

Gene: Lutum_5 Start: 3599, Stop: 4243, Start Num: 8

Candidate Starts for Lutum_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (15, 3632), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (41, 3767), (47, 3809), (55, 3842), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160),

Gene: Makima_7 Start: 5797, Stop: 6360, Start Num: 38

Candidate Starts for Makima_7:

(Start: 6 @5632 has 6 MA's), (Start: 38 @5797 has 3 MA's), (43, 5833), (45, 5839), (71, 5974), (100, 6208), (104, 6238), (114, 6310),

Gene: Merpity_5 Start: 3158, Stop: 3907, Start Num: 6

Candidate Starts for Merpity_5:

(Start: 6 @3158 has 6 MA's), (11, 3176), (17, 3209), (18, 3215), (21, 3230), (26, 3257), (34, 3299), (37, 3311), (53, 3413), (76, 3512), (79, 3524), (83, 3548), (93, 3635), (100, 3734), (111, 3788), (122, 3893),

Gene: Mireles_6 Start: 4203, Stop: 4766, Start Num: 38

Candidate Starts for Mireles_6:

(Start: 6 @4038 has 6 MA's), (Start: 38 @4203 has 3 MA's), (43, 4239), (45, 4245), (104, 4644), (114, 4716),

Gene: Morkie_4 Start: 3159, Stop: 3800, Start Num: 8

Candidate Starts for Morkie_4:

(Start: 8 @3159 has 29 MA's), (Start: 33 @3282 has 1 MA's), (34, 3285), (37, 3297), (41, 3327), (76, 3495), (77, 3498), (79, 3507), (83, 3531), (86, 3546), (92, 3609), (94, 3630), (98, 3681), (105, 3717), (107, 3732), (116, 3795),

Gene: MortyNRick_4 Start: 3576, Stop: 4232, Start Num: 8

Candidate Starts for MortyNRick_4:

(7, 3573), (Start: 8 @3576 has 29 MA's), (Start: 33 @3696 has 1 MA's), (34, 3699), (41, 3741), (50, 3792), (56, 3822), (79, 3918), (80, 3921), (88, 3975), (89, 3984), (92, 4020), (94, 4041), (102, 4125), (103, 4128), (105, 4134),

Gene: MrSmee_4 Start: 3158, Stop: 3907, Start Num: 6

Candidate Starts for MrSmee_4:

(Start: 6 @3158 has 6 MA's), (11, 3176), (12, 3185), (17, 3209), (18, 3215), (21, 3230), (24, 3239), (25, 3251), (26, 3257), (29, 3272), (34, 3299), (37, 3311), (53, 3413), (76, 3512), (79, 3524), (83, 3548), (93, 3635), (111, 3788),

Gene: Neuville_6 Start: 4338, Stop: 4859, Start Num: 38

Candidate Starts for Neuville_6:

(Start: 6 @4173 has 6 MA's), (Start: 38 @4338 has 3 MA's), (43, 4374), (92, 4650), (97, 4701), (104, 4779),

Gene: ODay_5 Start: 3606, Stop: 4265, Start Num: 8

Candidate Starts for ODay_5:

(1, 3531), (Start: 8 @3606 has 29 MA's), (34, 3729), (37, 3741), (41, 3771), (46, 3807), (77, 3942), (80, 3954), (89, 4017), (92, 4053), (93, 4056), (106, 4182),

Gene: Ogoopogo_6 Start: 3847, Stop: 4491, Start Num: 10

Candidate Starts for Ogoopogo_6:

(Start: 6 @3832 has 6 MA's), (Start: 10 @3847 has 7 MA's), (Start: 16 @3880 has 1 MA's), (27, 3922), (30, 3937), (32, 3949), (Start: 33 @3958 has 1 MA's), (36, 3970), (37, 3973), (39, 3997), (47, 4045), (64, 4126), (67, 4147), (73, 4168), (89, 4258), (92, 4297), (94, 4318), (103, 4399), (105, 4405), (114, 4459),

Gene: Periwinkle_5 Start: 3599, Stop: 4243, Start Num: 8

Candidate Starts for Periwinkle_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (15, 3632), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (41, 3767), (47, 3809), (55, 3842), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160),

Gene: Phabuloso_5 Start: 3597, Stop: 4241, Start Num: 8

Candidate Starts for Phabuloso_5:

(Start: 8 @3597 has 29 MA's), (14, 3627), (19, 3651), (21, 3663), (27, 3684), (32, 3711), (Start: 33 @3720 has 1 MA's), (34, 3723), (37, 3735), (47, 3807), (76, 3930), (79, 3942), (80, 3945), (81, 3948), (94, 4068), (103, 4152), (105, 4158),

Gene: Phistory_5 Start: 3598, Stop: 4242, Start Num: 8

Candidate Starts for Phistory_5:

(2, 3565), (Start: 8 @3598 has 29 MA's), (14, 3628), (27, 3685), (28, 3691), (Start: 33 @3721 has 1 MA's), (34, 3724), (41, 3766), (47, 3808), (79, 3943), (80, 3946), (94, 4069), (103, 4153), (105, 4159),

Gene: PhorbesPhlower_4 Start: 3159, Stop: 3800, Start Num: 8

Candidate Starts for PhorbesPhlower_4:

(Start: 8 @3159 has 29 MA's), (Start: 33 @3282 has 1 MA's), (34, 3285), (37, 3297), (41, 3327), (76, 3495), (77, 3498), (79, 3507), (83, 3531), (86, 3546), (92, 3609), (94, 3630), (98, 3681), (105, 3717), (107, 3732), (116, 3795),

Gene: Pitbull_4 Start: 3185, Stop: 3862, Start Num: 9

Candidate Starts for Pitbull_4:

(Start: 9 @3185 has 1 MA's), (Start: 20 @3239 has 4 MA's), (21, 3251), (26, 3269), (31, 3299), (32, 3302), (41, 3356), (53, 3425), (64, 3482), (76, 3530), (78, 3536), (88, 3599), (91, 3641), (92, 3644), (101, 3728), (109, 3767), (110, 3776),

Gene: Raqqa_5 Start: 3858, Stop: 4661, Start Num: 6

Candidate Starts for Raqqa_5:

(Start: 6 @3858 has 6 MA's), (17, 3909), (26, 3957), (37, 4011), (53, 4113), (66, 4212), (71, 4251), (76, 4266), (83, 4302), (92, 4386), (93, 4389), (100, 4488), (111, 4542),

Gene: Roberts_6 Start: 4338, Stop: 4859, Start Num: 38

Candidate Starts for Roberts_6:

(Start: 6 @4173 has 6 MA's), (Start: 38 @4338 has 3 MA's), (43, 4374), (92, 4650), (97, 4701), (104, 4779),

Gene: ShawBrad_5 Start: 3599, Stop: 4243, Start Num: 8

Candidate Starts for ShawBrad_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (41, 3767), (47, 3809), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160), (114, 4214),

Gene: SilverChicken_5 Start: 3735, Stop: 4229, Start Num: 39

Candidate Starts for SilverChicken_5:

(Start: 6 @3570 has 6 MA's), (Start: 10 @3585 has 7 MA's), (Start: 16 @3618 has 1 MA's), (27, 3660), (30, 3675), (32, 3687), (Start: 33 @3696 has 1 MA's), (37, 3711), (39, 3735), (47, 3783), (64, 3864), (67, 3885), (73, 3906), (89, 3996), (92, 4035), (94, 4056), (103, 4137), (105, 4143), (114, 4197),

Gene: Skitty_4 Start: 3158, Stop: 3907, Start Num: 6

Candidate Starts for Skitty_4:

(Start: 6 @3158 has 6 MA's), (11, 3176), (12, 3185), (17, 3209), (18, 3215), (21, 3230), (24, 3239), (25, 3251), (26, 3257), (29, 3272), (34, 3299), (37, 3311), (53, 3413), (76, 3512), (79, 3524), (83, 3548), (93, 3635), (111, 3788), (122, 3893),

Gene: Soul22_5 Start: 3618, Stop: 4229, Start Num: 16

Candidate Starts for Soul22_5:

(Start: 6 @3570 has 6 MA's), (Start: 10 @3585 has 7 MA's), (Start: 16 @3618 has 1 MA's), (27, 3660), (30, 3675), (32, 3687), (Start: 33 @3696 has 1 MA's), (36, 3708), (37, 3711), (39, 3735), (47, 3783),

(62, 3852), (64, 3864), (67, 3885), (73, 3906), (89, 3996), (92, 4035), (94, 4056), (103, 4137), (105, 4143), (114, 4197),

Gene: Spartoi_4 Start: 3328, Stop: 4098, Start Num: 4

Candidate Starts for Spartoi_4:

(3, 3322), (Start: 4 @3328 has 1 MA's), (22, 3427), (46, 3565), (54, 3604), (63, 3643), (64, 3652), (75, 3715), (90, 3790), (92, 3826), (94, 3847), (100, 3916), (120, 4057),

Gene: Spooky_5 Start: 3598, Stop: 4242, Start Num: 8

Candidate Starts for Spooky_5:

(Start: 8 @3598 has 29 MA's), (Start: 33 @3721 has 1 MA's), (34, 3724), (36, 3733), (37, 3736), (41, 3766), (52, 3832), (70, 3916), (77, 3934), (80, 3946), (83, 3967), (84, 3970), (92, 4048), (94, 4069), (98, 4123), (100, 4129), (105, 4159),

Gene: Squiddly_6 Start: 4291, Stop: 4935, Start Num: 8

Candidate Starts for Squiddly_6:

(Start: 8 @4291 has 29 MA's), (23, 4363), (Start: 33 @4414 has 1 MA's), (34, 4417), (37, 4429), (41, 4459), (52, 4525), (55, 4534), (70, 4609), (76, 4624), (79, 4636), (80, 4639), (83, 4660), (84, 4663), (92, 4741), (94, 4762), (98, 4816), (100, 4822), (105, 4852),

Gene: Studio_6 Start: 4142, Stop: 4663, Start Num: 38

Candidate Starts for Studio_6:

(Start: 6 @3977 has 6 MA's), (Start: 38 @4142 has 3 MA's), (43, 4178), (47, 4196), (92, 4454), (95, 4493), (104, 4583),

Gene: TMaxx_6 Start: 4276, Stop: 4839, Start Num: 38

Candidate Starts for TMaxx_6:

(Start: 6 @4111 has 6 MA's), (Start: 38 @4276 has 3 MA's), (43, 4312), (69, 4447), (91, 4585), (114, 4789),

Gene: TripleC_9 Start: 7743, Stop: 8306, Start Num: 38

Candidate Starts for TripleC_9:

(Start: 6 @7578 has 6 MA's), (Start: 38 @7743 has 3 MA's), (43, 7779), (69, 7914), (91, 8052), (114, 8256),

Gene: Whitney_5 Start: 3722, Stop: 4243, Start Num: 33

Candidate Starts for Whitney_5:

(Start: 8 @3599 has 29 MA's), (14, 3629), (15, 3632), (27, 3686), (Start: 33 @3722 has 1 MA's), (34, 3725), (41, 3767), (47, 3809), (55, 3842), (79, 3944), (80, 3947), (81, 3950), (94, 4070), (103, 4154), (105, 4160),

Gene: Yoshi_5 Start: 3585, Stop: 4229, Start Num: 10

Candidate Starts for Yoshi_5:

(Start: 10 @3585 has 7 MA's), (Start: 16 @3618 has 1 MA's), (27, 3660), (30, 3675), (32, 3687), (Start: 33 @3696 has 1 MA's), (36, 3708), (37, 3711), (39, 3735), (47, 3783), (62, 3852), (64, 3864), (67, 3885), (73, 3906), (89, 3996), (92, 4035), (94, 4056), (103, 4137), (105, 4143), (114, 4197),

Gene: Zapner_6 Start: 4110, Stop: 4754, Start Num: 10

Candidate Starts for Zapner_6:

(Start: 10 @4110 has 7 MA's), (Start: 16 @4143 has 1 MA's), (27, 4185), (30, 4200), (32, 4212), (Start: 33 @4221 has 1 MA's), (36, 4233), (37, 4236), (39, 4260), (47, 4308), (62, 4377), (64, 4389), (67, 4410), (73, 4431), (89, 4521), (92, 4560), (94, 4581), (103, 4662), (105, 4668), (114, 4722),

Gene: Zucker_5 Start: 3788, Stop: 4504, Start Num: 13

Candidate Starts for Zucker_5:

(Start: 6 @3755 has 6 MA's), (Start: 13 @3788 has 1 MA's), (19, 3815), (21, 3827), (26, 3854), (30, 3872), (34, 3896), (42, 3944), (43, 3962), (45, 3968), (60, 4049), (62, 4058), (69, 4097), (79, 4130), (90, 4196), (100, 4328), (108, 4367), (112, 4388), (115, 4427), (123, 4484),