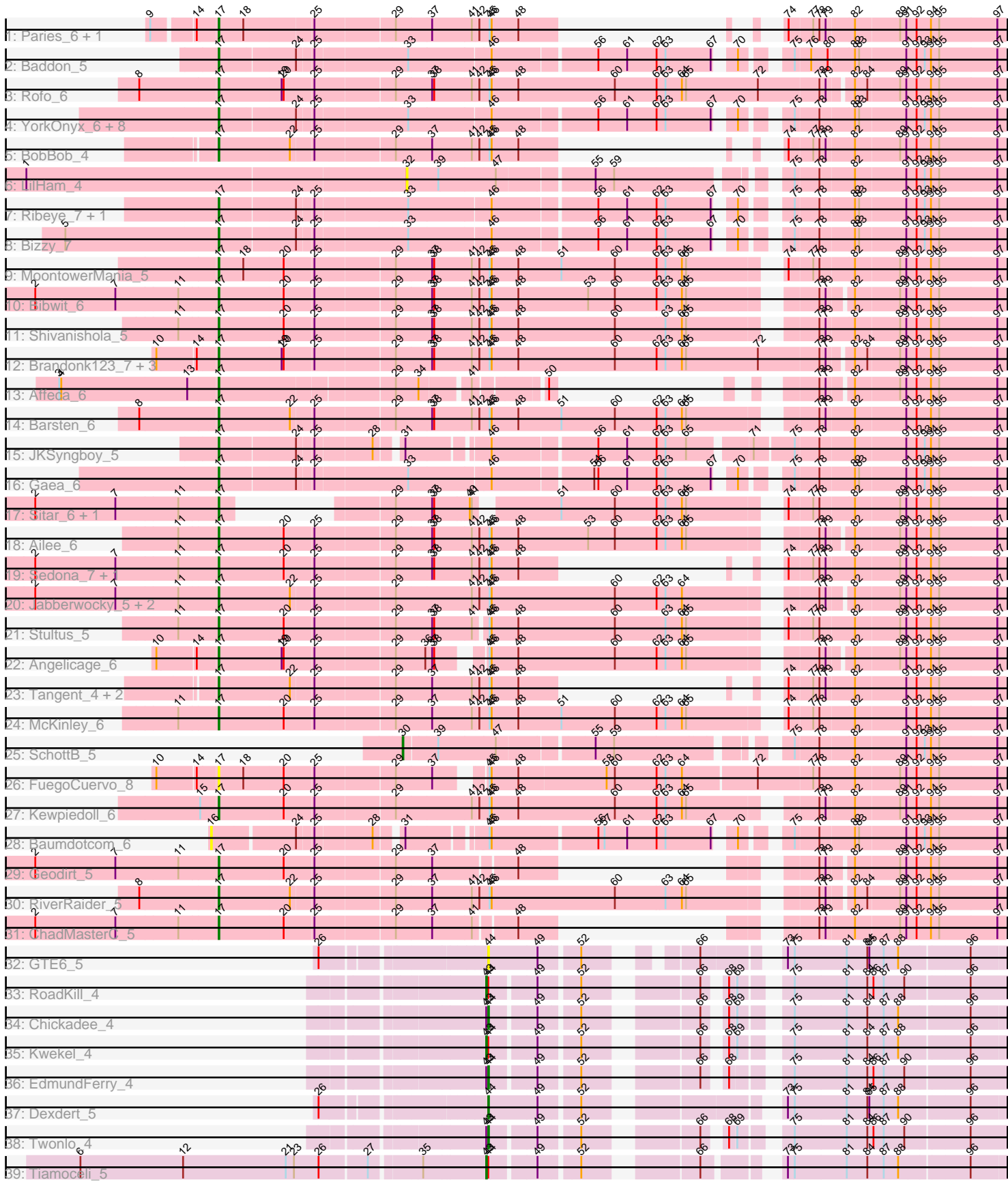


Pham 202964



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 202964 Report

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

Pham number 202964 has 58 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Paries_6, Galadriel_7
- Track 2 : Baddon_5
- Track 3 : Rofo_6
- Track 4 : YorkOnyx_6, Tycho_6, Flatwoods_7, Gustavo_6, Kroos_6, Ashertheman_6, Saronaya_6, Tangerine_6, Kwobi_6
- Track 5 : BobBob_4
- Track 6 : LilHam_4
- Track 7 : Ribeye_7, StorminNorm_6
- Track 8 : Bizzy_7
- Track 9 : MoontowerMania_5
- Track 10 : Bibwit_6
- Track 11 : Shivanishola_5
- Track 12 : Brandonk123_7, Love_7, Thing3_6, Kamashten_6
- Track 13 : Affeca_6
- Track 14 : Barsten_6
- Track 15 : JKSyngboy_5
- Track 16 : Gaea_6
- Track 17 : Sitar_6, Lennon_6
- Track 18 : Ailee_6
- Track 19 : Sedona_7, Keitabear_6
- Track 20 : Jabberwocky_5, Fitzgerald_5, Sanjuju_5
- Track 21 : Stultus_5
- Track 22 : Angelicage_6
- Track 23 : Tangent_4, Charming_4, Fosterous_4
- Track 24 : McKinley_6
- Track 25 : SchottB_5
- Track 26 : FuegoCuervo_8
- Track 27 : Kewpiedoll_6
- Track 28 : Baumdotcom_6
- Track 29 : Geodirt_5
- Track 30 : RiverRaider_5
- Track 31 : ChadMasterC_5
- Track 32 : GTE6_5
- Track 33 : RoadKill_4
- Track 34 : Chickadee_4
- Track 35 : Kwekel_4
- Track 36 : EdmundFerry_4

- Track 37 : Dxdert_5
- Track 38 : Twonlo_4
- Track 39 : Tiamoceli_5

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

The start number called the most often in the published annotations is 17, it was called in 41 of the 49 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca_6, Ailee_6, Angelicage_6, Ashertheman_6, Baddon_5, Barsten_6, Bibwit_6, Bizzy_7, BobBob_4, Brandonk123_7, ChadMasterC_5, Charming_4, Fitzgerald_5, Flatwoods_7, Fosterous_4, FuegoCuervo_8, Gaea_6, Galadriel_7, Geodirt_5, Gustavo_6, JKSyngboy_5, Jabberwocky_5, Kamashten_6, Keitabear_6, Kewpiedoll_6, Kroos_6, Kwobi_6, Lennon_6, Love_7, McKinley_6, MoontowerMania_5, Paries_6, Ribeye_7, RiverRaider_5, Rofo_6, Sanjuju_5, Saronaya_6, Sedona_7, Shivanishola_5, Sitar_6, StorminNorm_6, Stultus_5, Tangent_4, Tangerine_6, Thing3_6, Tycho_6, YorkOnyx_6,

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

-

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

- Baumdotcom_6, Chickadee_4, Dxdert_5, EdmundFerry_4, GTE6_5, Kwekel_4, LilHam_4, RoadKill_4, SchottB_5, Tiamoceli_5, Twonlo_4,

Summary by start number:

Start 16:

- Found in 1 of 58 (1.7%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Baumdotcom_6 (DE1),

Start 17:

- Found in 47 of 58 (81.0%) of genes in pham
- Manual Annotations of this start: 41 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Affeca_6 (DE1), Ailee_6 (DE1), Angelicage_6 (DE1), Ashertheman_6 (DE1), Baddon_5 (DE1), Barsten_6 (DE1), Bibwit_6 (DE1), Bizzy_7 (DE1), BobBob_4 (DE1), Brandonk123_7 (DE1), ChadMasterC_5 (DE1), Charming_4 (DE1), Fitzgerald_5 (DE1), Flatwoods_7 (DE1), Fosterous_4 (DE1), FuegoCuervo_8 (DE1), Gaea_6 (DE1), Galadriel_7 (DE1), Geodirt_5 (DE1), Gustavo_6 (DE1), JKSyngboy_5 (DE1), Jabberwocky_5 (DE1), Kamashten_6 (DE1), Keitabear_6 (DE1), Kewpiedoll_6 (DE1), Kroos_6 (DE1), Kwobi_6 (DE1), Lennon_6 (DE1), Love_7 (DE1), McKinley_6 (DE1), MoontowerMania_5 (DE1), Paries_6 (DE1), Ribeye_7 (DE1), RiverRaider_5 (DE1), Rofo_6 (DE1), Sanjuju_5 (DE1), Saronaya_6 (DE1), Sedona_7 (DE1), Shivanishola_5 (DE1), Sitar_6 (DE1), StorminNorm_6 (DE1), Stultus_5 (DE1), Tangent_4 (DE1), Tangerine_6 (DE1), Thing3_6 (DE1), Tycho_6 (DE1), YorkOnyx_6

(DE1),

Start 30:

- Found in 1 of 58 (1.7%) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SchottB_5 (DE1),

Start 32:

- Found in 1 of 58 (1.7%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilHam_4 (DE1),

Start 43:

- Found in 6 of 58 (10.3%) of genes in pham
- Manual Annotations of this start: 3 of 49
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Kwekel_4 (DE3), RoadKill_4 (DE3), Tiamoceli_5 (DE3),

Start 44:

- Found in 8 of 58 (13.8%) of genes in pham
- Manual Annotations of this start: 4 of 49
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Chickadee_4 (DE3), Dextert_5 (DE3), EdmundFerry_4 (DE3), GTE6_5 (DE3), Twonlo_4 (DE3),

Summary by clusters:

There are 2 clusters represented in this pham: DE1, DE3,

Info for manual annotations of cluster DE1:

- Start number 17 was manually annotated 41 times for cluster DE1.
- Start number 30 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster DE3:

- Start number 43 was manually annotated 3 times for cluster DE3.
- Start number 44 was manually annotated 4 times for cluster DE3.

Gene Information:

Gene: Affeca_6 Start: 3776, Stop: 4534, Start Num: 17

Candidate Starts for Affeca_6:

(3, 3548), (4, 3551), (13, 3734), (Start: 17 @3776 has 41 MA's), (29, 4016), (34, 4049), (41, 4109), (50, 4193), (78, 4280), (79, 4289), (82, 4319), (89, 4382), (91, 4391), (92, 4406), (94, 4427), (95, 4439), (97, 4523),

Gene: Ailee_6 Start: 4306, Stop: 5376, Start Num: 17

Candidate Starts for Ailee_6:

(11, 4249), (Start: 17 @4306 has 41 MA's), (20, 4399), (25, 4441), (29, 4552), (37, 4603), (38, 4606), (41, 4660), (42, 4669), (45, 4684), (46, 4687), (48, 4726), (53, 4828), (60, 4867), (62, 4927), (63, 4939), (64, 4963), (65, 4969), (78, 5122), (79, 5131), (82, 5161), (89, 5224), (91, 5233), (92, 5248), (94, 5269), (95, 5281), (97, 5365),

Gene: Angelicage_6 Start: 3903, Stop: 4943, Start Num: 17

Candidate Starts for Angelicage_6:

(10, 3822), (14, 3876), (Start: 17 @3903 has 41 MA's), (19, 3993), (20, 3996), (25, 4038), (29, 4149), (36, 4191), (37, 4200), (38, 4203), (45, 4251), (46, 4254), (48, 4293), (60, 4434), (62, 4494), (63, 4506), (64, 4530), (65, 4536), (78, 4689), (79, 4698), (82, 4728), (89, 4791), (91, 4800), (92, 4815), (94, 4836), (95, 4848), (97, 4932),

Gene: Ashertheman_6 Start: 3009, Stop: 4040, Start Num: 17

Candidate Starts for Ashertheman_6:

(Start: 17 @3009 has 41 MA's), (24, 3114), (25, 3135), (33, 3261), (46, 3375), (56, 3519), (61, 3558), (62, 3600), (63, 3612), (67, 3678), (70, 3696), (75, 3744), (78, 3777), (82, 3825), (83, 3831), (91, 3897), (92, 3912), (93, 3924), (94, 3933), (95, 3945), (97, 4029),

Gene: Baddon_5 Start: 3646, Stop: 4677, Start Num: 17

Candidate Starts for Baddon_5:

(Start: 17 @3646 has 41 MA's), (24, 3751), (25, 3772), (33, 3898), (46, 4012), (56, 4156), (61, 4195), (62, 4237), (63, 4249), (67, 4315), (70, 4333), (75, 4381), (76, 4402), (80, 4426), (82, 4462), (83, 4468), (91, 4534), (92, 4549), (93, 4561), (94, 4570), (95, 4582), (97, 4666),

Gene: Barsten_6 Start: 2980, Stop: 4056, Start Num: 17

Candidate Starts for Barsten_6:

(8, 2869), (Start: 17 @2980 has 41 MA's), (22, 3082), (25, 3112), (29, 3223), (37, 3274), (38, 3277), (41, 3331), (42, 3340), (45, 3355), (46, 3358), (48, 3397), (51, 3460), (60, 3538), (62, 3598), (63, 3610), (64, 3634), (65, 3640), (78, 3793), (79, 3802), (82, 3841), (91, 3913), (92, 3928), (94, 3949), (95, 3961), (97, 4045),

Gene: Baumdotcom_6 Start: 3056, Stop: 4063, Start Num: 16

Candidate Starts for Baumdotcom_6:

(16, 3056), (24, 3167), (25, 3188), (28, 3266), (31, 3296), (45, 3392), (46, 3395), (56, 3542), (57, 3551), (61, 3581), (62, 3623), (63, 3635), (67, 3701), (70, 3719), (75, 3767), (78, 3800), (82, 3848), (83, 3854), (91, 3920), (92, 3935), (93, 3947), (94, 3956), (95, 3968), (97, 4052),

Gene: Bibwit_6 Start: 4139, Stop: 5209, Start Num: 17

Candidate Starts for Bibwit_6:

(2, 3875), (7, 3992), (11, 4082), (Start: 17 @4139 has 41 MA's), (20, 4232), (25, 4274), (29, 4385), (37, 4436), (38, 4439), (41, 4493), (42, 4502), (45, 4517), (46, 4520), (48, 4559), (53, 4661), (60, 4700), (62, 4760), (63, 4772), (64, 4796), (65, 4802), (78, 4955), (79, 4964), (82, 4994), (89, 5057), (91, 5066), (92, 5081), (94, 5102), (95, 5114), (97, 5198),

Gene: Bizzy_7 Start: 3206, Stop: 4237, Start Num: 17

Candidate Starts for Bizzy_7:

(5, 2984), (Start: 17 @3206 has 41 MA's), (24, 3311), (25, 3332), (33, 3458), (46, 3572), (56, 3716), (61, 3755), (62, 3797), (63, 3809), (67, 3875), (70, 3893), (75, 3941), (78, 3974), (82, 4022), (83, 4028), (91, 4094), (92, 4109), (93, 4121), (94, 4130), (95, 4142), (97, 4226),

Gene: BobBob_4 Start: 3078, Stop: 3878, Start Num: 17

Candidate Starts for BobBob_4:

(Start: 17 @3078 has 41 MA's), (22, 3180), (25, 3210), (29, 3321), (37, 3372), (41, 3429), (42, 3438), (45, 3453), (46, 3456), (48, 3495), (74, 3573), (77, 3606), (78, 3615), (79, 3624), (82, 3663), (89, 3726), (91, 3735), (92, 3750), (94, 3771), (95, 3783), (97, 3867),

Gene: Brandonk123_7 Start: 3107, Stop: 4216, Start Num: 17

Candidate Starts for Brandonk123_7:

(10, 3026), (14, 3080), (Start: 17 @3107 has 41 MA's), (19, 3197), (20, 3200), (25, 3242), (29, 3353), (37, 3404), (38, 3407), (41, 3461), (42, 3470), (45, 3485), (46, 3488), (48, 3527), (60, 3668), (62, 3728), (63, 3740), (64, 3764), (65, 3770), (72, 3875), (78, 3962), (79, 3971), (82, 4001), (84, 4019), (89, 4064), (91, 4073), (92, 4088), (94, 4109), (95, 4121), (97, 4205),

Gene: ChadMasterC_5 Start: 3596, Stop: 4417, Start Num: 17

Candidate Starts for ChadMasterC_5:

(2, 3332), (7, 3449), (11, 3539), (Start: 17 @3596 has 41 MA's), (20, 3689), (25, 3731), (29, 3842), (37, 3893), (41, 3950), (48, 4004), (78, 4154), (79, 4163), (82, 4202), (89, 4265), (91, 4274), (92, 4289), (94, 4310), (95, 4322), (97, 4406),

Gene: Charming_4 Start: 3078, Stop: 3878, Start Num: 17

Candidate Starts for Charming_4:

(Start: 17 @3078 has 41 MA's), (22, 3180), (25, 3210), (29, 3321), (37, 3372), (41, 3429), (42, 3438), (45, 3453), (46, 3456), (48, 3495), (74, 3573), (77, 3606), (78, 3615), (79, 3624), (82, 3663), (91, 3735), (92, 3750), (94, 3771), (95, 3783), (97, 3867),

Gene: Chickadee_4 Start: 2419, Stop: 3039, Start Num: 44

Candidate Starts for Chickadee_4:

(Start: 43 @2416 has 3 MA's), (Start: 44 @2419 has 4 MA's), (49, 2479), (52, 2530), (66, 2662), (68, 2683), (69, 2692), (75, 2743), (81, 2818), (84, 2848), (87, 2872), (88, 2893), (96, 2989),

Gene: Dextert_5 Start: 2859, Stop: 3503, Start Num: 44

Candidate Starts for Dextert_5:

(26, 2649), (Start: 44 @2859 has 4 MA's), (49, 2928), (52, 2979), (73, 3198), (75, 3207), (81, 3282), (84, 3312), (85, 3315), (87, 3336), (88, 3357), (96, 3453),

Gene: EdmundFerry_4 Start: 2419, Stop: 3042, Start Num: 44

Candidate Starts for EdmundFerry_4:

(Start: 43 @2416 has 3 MA's), (Start: 44 @2419 has 4 MA's), (49, 2479), (52, 2530), (66, 2662), (68, 2683), (75, 2743), (81, 2818), (84, 2848), (86, 2857), (87, 2872), (90, 2902), (96, 2989),

Gene: Fitzgerald_5 Start: 3728, Stop: 4804, Start Num: 17

Candidate Starts for Fitzgerald_5:

(2, 3464), (7, 3581), (11, 3671), (Start: 17 @3728 has 41 MA's), (22, 3830), (25, 3860), (29, 3971), (41, 4079), (42, 4088), (45, 4103), (46, 4106), (60, 4286), (62, 4346), (63, 4358), (64, 4382), (78, 4541), (79, 4550), (82, 4589), (89, 4652), (91, 4661), (92, 4676), (94, 4697), (95, 4709), (97, 4793),

Gene: Flatwoods_7 Start: 3206, Stop: 4237, Start Num: 17

Candidate Starts for Flatwoods_7:

(Start: 17 @3206 has 41 MA's), (24, 3311), (25, 3332), (33, 3458), (46, 3572), (56, 3716), (61, 3755), (62, 3797), (63, 3809), (67, 3875), (70, 3893), (75, 3941), (78, 3974), (82, 4022), (83, 4028), (91, 4094), (92, 4109), (93, 4121), (94, 4130), (95, 4142), (97, 4226),

Gene: Fosterous_4 Start: 3078, Stop: 3878, Start Num: 17

Candidate Starts for Fosterous_4:

(Start: 17 @3078 has 41 MA's), (22, 3180), (25, 3210), (29, 3321), (37, 3372), (41, 3429), (42, 3438), (45, 3453), (46, 3456), (48, 3495), (74, 3573), (77, 3606), (78, 3615), (79, 3624), (82, 3663), (91, 3735), (92, 3750), (94, 3771), (95, 3783), (97, 3867),

Gene: FuegoCuervo_8 Start: 3282, Stop: 4364, Start Num: 17

Candidate Starts for FuegoCuervo_8:

(10, 3201), (14, 3255), (Start: 17 @3282 has 41 MA's), (18, 3318), (20, 3375), (25, 3417), (29, 3528), (37, 3579), (45, 3630), (46, 3633), (48, 3672), (58, 3798), (60, 3810), (62, 3870), (63, 3882), (64, 3906), (72, 4011), (77, 4089), (78, 4098), (82, 4149), (89, 4212), (91, 4221), (92, 4236), (94, 4257), (95, 4269), (97, 4353),

Gene: GTE6_5 Start: 2923, Stop: 3546, Start Num: 44

Candidate Starts for GTE6_5:

(26, 2713), (Start: 44 @2923 has 4 MA's), (49, 2992), (52, 3043), (66, 3154), (73, 3241), (75, 3250), (81, 3325), (84, 3355), (85, 3358), (87, 3379), (88, 3400), (96, 3496),

Gene: Gaea_6 Start: 3012, Stop: 4043, Start Num: 17

Candidate Starts for Gaea_6:

(Start: 17 @3012 has 41 MA's), (24, 3117), (25, 3138), (33, 3264), (46, 3378), (54, 3516), (56, 3522), (61, 3561), (62, 3603), (63, 3615), (67, 3681), (70, 3699), (75, 3747), (78, 3780), (82, 3828), (83, 3834), (91, 3900), (92, 3915), (93, 3927), (94, 3936), (95, 3948), (97, 4032),

Gene: Galadriel_7 Start: 3107, Stop: 3907, Start Num: 17

Candidate Starts for Galadriel_7:

(9, 3026), (14, 3080), (Start: 17 @3107 has 41 MA's), (18, 3143), (25, 3239), (29, 3350), (37, 3401), (41, 3458), (42, 3467), (45, 3482), (46, 3485), (48, 3524), (74, 3602), (77, 3635), (78, 3644), (79, 3653), (82, 3692), (89, 3755), (91, 3764), (92, 3779), (94, 3800), (95, 3812), (97, 3896),

Gene: Geodirt_5 Start: 3648, Stop: 4460, Start Num: 17

Candidate Starts for Geodirt_5:

(2, 3384), (7, 3501), (11, 3591), (Start: 17 @3648 has 41 MA's), (20, 3741), (25, 3783), (29, 3894), (37, 3945), (48, 4056), (78, 4206), (79, 4215), (82, 4245), (89, 4308), (91, 4317), (92, 4332), (94, 4353), (95, 4365), (97, 4449),

Gene: Gustavo_6 Start: 3012, Stop: 4040, Start Num: 17

Candidate Starts for Gustavo_6:

(Start: 17 @3012 has 41 MA's), (24, 3117), (25, 3138), (33, 3264), (46, 3378), (56, 3519), (61, 3558), (62, 3600), (63, 3612), (67, 3678), (70, 3696), (75, 3744), (78, 3777), (82, 3825), (83, 3831), (91, 3897), (92, 3912), (93, 3924), (94, 3933), (95, 3945), (97, 4029),

Gene: JKSyngboy_5 Start: 3640, Stop: 4671, Start Num: 17

Candidate Starts for JKSyngboy_5:

(Start: 17 @3640 has 41 MA's), (24, 3745), (25, 3766), (28, 3844), (31, 3874), (46, 3973), (56, 4117), (61, 4156), (62, 4198), (63, 4210), (65, 4240), (71, 4321), (75, 4375), (78, 4408), (82, 4456), (91, 4528), (92, 4543), (93, 4555), (94, 4564), (95, 4576), (97, 4660),

Gene: Jabberwocky_5 Start: 3728, Stop: 4795, Start Num: 17

Candidate Starts for Jabberwocky_5:

(2, 3464), (7, 3581), (11, 3671), (Start: 17 @3728 has 41 MA's), (22, 3830), (25, 3860), (29, 3971), (41, 4079), (42, 4088), (45, 4103), (46, 4106), (60, 4286), (62, 4346), (63, 4358), (64, 4382), (78, 4541), (79, 4550), (82, 4580), (89, 4643), (91, 4652), (92, 4667), (94, 4688), (95, 4700), (97, 4784),

Gene: Kamashten_6 Start: 3108, Stop: 4217, Start Num: 17

Candidate Starts for Kamashten_6:

(10, 3027), (14, 3081), (Start: 17 @3108 has 41 MA's), (19, 3198), (20, 3201), (25, 3243), (29, 3354), (37, 3405), (38, 3408), (41, 3462), (42, 3471), (45, 3486), (46, 3489), (48, 3528), (60, 3669), (62, 3729), (63, 3741), (64, 3765), (65, 3771), (72, 3876), (78, 3963), (79, 3972), (82, 4002), (84, 4020), (89, 4065), (91, 4074), (92, 4089), (94, 4110), (95, 4122), (97, 4206),

Gene: Keitabear_6 Start: 5048, Stop: 5851, Start Num: 17

Candidate Starts for Keitabear_6:

(2, 4784), (7, 4901), (11, 4991), (Start: 17 @5048 has 41 MA's), (20, 5141), (25, 5183), (29, 5294), (37, 5345), (38, 5348), (41, 5402), (42, 5411), (45, 5426), (46, 5429), (48, 5468), (74, 5546), (77, 5579), (78, 5588), (79, 5597), (82, 5636), (89, 5699), (91, 5708), (92, 5723), (94, 5744), (95, 5756), (97, 5840),

Gene: Kewpiedoll_6 Start: 2983, Stop: 4062, Start Num: 17

Candidate Starts for Kewpiedoll_6:

(15, 2959), (Start: 17 @2983 has 41 MA's), (20, 3076), (25, 3118), (29, 3229), (41, 3337), (42, 3346), (45, 3361), (46, 3364), (48, 3403), (60, 3544), (62, 3604), (63, 3616), (64, 3640), (65, 3646), (78, 3799), (79, 3808), (82, 3847), (89, 3910), (91, 3919), (92, 3934), (94, 3955), (95, 3967), (97, 4051),

Gene: Kroos_6 Start: 3173, Stop: 4204, Start Num: 17

Candidate Starts for Kroos_6:

(Start: 17 @3173 has 41 MA's), (24, 3278), (25, 3299), (33, 3425), (46, 3539), (56, 3683), (61, 3722), (62, 3764), (63, 3776), (67, 3842), (70, 3860), (75, 3908), (78, 3941), (82, 3989), (83, 3995), (91, 4061), (92, 4076), (93, 4088), (94, 4097), (95, 4109), (97, 4193),

Gene: Kwekel_4 Start: 2416, Stop: 3039, Start Num: 43

Candidate Starts for Kwekel_4:

(Start: 43 @2416 has 3 MA's), (Start: 44 @2419 has 4 MA's), (49, 2479), (52, 2530), (66, 2662), (68, 2683), (69, 2692), (75, 2743), (81, 2818), (84, 2848), (87, 2872), (88, 2893), (96, 2989),

Gene: Kwobi_6 Start: 3012, Stop: 4043, Start Num: 17

Candidate Starts for Kwobi_6:

(Start: 17 @3012 has 41 MA's), (24, 3117), (25, 3138), (33, 3264), (46, 3378), (56, 3522), (61, 3561), (62, 3603), (63, 3615), (67, 3681), (70, 3699), (75, 3747), (78, 3780), (82, 3828), (83, 3834), (91, 3900), (92, 3915), (93, 3927), (94, 3936), (95, 3948), (97, 4032),

Gene: Lennon_6 Start: 4140, Stop: 5048, Start Num: 17

Candidate Starts for Lennon_6:

(2, 3876), (7, 3993), (11, 4083), (Start: 17 @4140 has 41 MA's), (29, 4245), (37, 4296), (38, 4299), (40, 4347), (41, 4350), (51, 4452), (60, 4530), (62, 4590), (63, 4602), (64, 4626), (65, 4632), (74, 4743), (77, 4776), (78, 4785), (82, 4833), (89, 4896), (91, 4905), (92, 4920), (94, 4941), (95, 4953), (97, 5037),

Gene: LilHam_4 Start: 2583, Stop: 3359, Start Num: 32

Candidate Starts for LilHam_4:

(1, 2040), (32, 2583), (39, 2628), (47, 2709), (55, 2835), (59, 2859), (75, 3063), (78, 3096), (82, 3144), (91, 3216), (92, 3231), (93, 3243), (94, 3252), (95, 3264), (97, 3348),

Gene: Love_7 Start: 3107, Stop: 4216, Start Num: 17

Candidate Starts for Love_7:

(10, 3026), (14, 3080), (Start: 17 @3107 has 41 MA's), (19, 3197), (20, 3200), (25, 3242), (29, 3353), (37, 3404), (38, 3407), (41, 3461), (42, 3470), (45, 3485), (46, 3488), (48, 3527), (60, 3668), (62, 3728), (63, 3740), (64, 3764), (65, 3770), (72, 3875), (78, 3962), (79, 3971), (82, 4001), (84, 4019), (89, 4064), (91, 4073), (92, 4088), (94, 4109), (95, 4121), (97, 4205),

Gene: McKinley_6 Start: 3980, Stop: 5059, Start Num: 17

Candidate Starts for McKinley_6:

(11, 3923), (Start: 17 @3980 has 41 MA's), (20, 4073), (25, 4115), (29, 4226), (37, 4277), (41, 4334), (42, 4343), (45, 4358), (46, 4361), (48, 4400), (51, 4463), (60, 4541), (62, 4601), (63, 4613), (64, 4637), (65, 4643), (74, 4754), (77, 4787), (78, 4796), (82, 4844), (91, 4916), (92, 4931), (94, 4952), (95, 4964), (97, 5048),

Gene: MoontowerMania_5 Start: 2725, Stop: 3804, Start Num: 17

Candidate Starts for MoontowerMania_5:

(Start: 17 @2725 has 41 MA's), (18, 2761), (20, 2818), (25, 2860), (29, 2971), (37, 3022), (38, 3025), (41, 3079), (42, 3088), (45, 3103), (46, 3106), (48, 3145), (51, 3208), (60, 3286), (62, 3346), (63, 3358), (64, 3382), (65, 3388), (74, 3499), (77, 3532), (78, 3541), (82, 3589), (89, 3652), (91, 3661), (92, 3676), (94, 3697), (95, 3709), (97, 3793),

Gene: Paries_6 Start: 3108, Stop: 3908, Start Num: 17

Candidate Starts for Paries_6:

(9, 3027), (14, 3081), (Start: 17 @3108 has 41 MA's), (18, 3144), (25, 3240), (29, 3351), (37, 3402), (41, 3459), (42, 3468), (45, 3483), (46, 3486), (48, 3525), (74, 3603), (77, 3636), (78, 3645), (79, 3654), (82, 3693), (89, 3756), (91, 3765), (92, 3780), (94, 3801), (95, 3813), (97, 3897),

Gene: Ribeye_7 Start: 3207, Stop: 4238, Start Num: 17

Candidate Starts for Ribeye_7:

(Start: 17 @3207 has 41 MA's), (24, 3312), (25, 3333), (33, 3459), (46, 3573), (56, 3717), (61, 3756), (62, 3798), (63, 3810), (67, 3876), (70, 3894), (75, 3942), (78, 3975), (82, 4023), (83, 4029), (91, 4095), (92, 4110), (93, 4122), (94, 4131), (95, 4143), (97, 4227),

Gene: RiverRaider_5 Start: 2737, Stop: 3804, Start Num: 17

Candidate Starts for RiverRaider_5:

(8, 2626), (Start: 17 @2737 has 41 MA's), (22, 2839), (25, 2869), (29, 2980), (37, 3031), (41, 3088), (42, 3097), (45, 3112), (46, 3115), (60, 3295), (63, 3367), (64, 3391), (65, 3397), (78, 3550), (79, 3559), (82, 3589), (84, 3607), (89, 3652), (91, 3661), (92, 3676), (94, 3697), (95, 3709), (97, 3793),

Gene: RoadKill_4 Start: 2416, Stop: 3042, Start Num: 43

Candidate Starts for RoadKill_4:

(Start: 43 @2416 has 3 MA's), (Start: 44 @2419 has 4 MA's), (49, 2479), (52, 2530), (66, 2662), (68, 2683), (69, 2692), (75, 2743), (81, 2818), (84, 2848), (86, 2857), (87, 2872), (90, 2902), (96, 2989),

Gene: Rofo_6 Start: 3776, Stop: 4885, Start Num: 17

Candidate Starts for Rofo_6:

(8, 3665), (Start: 17 @3776 has 41 MA's), (19, 3866), (20, 3869), (25, 3911), (29, 4022), (37, 4073), (38, 4076), (41, 4130), (42, 4139), (45, 4154), (46, 4157), (48, 4196), (60, 4337), (62, 4397), (63, 4409), (64, 4433), (65, 4439), (72, 4544), (78, 4631), (79, 4640), (82, 4670), (84, 4688), (89, 4733), (91, 4742), (92, 4757), (94, 4778), (95, 4790), (97, 4874),

Gene: Sanjuju_5 Start: 3766, Stop: 4833, Start Num: 17

Candidate Starts for Sanjuju_5:

(2, 3502), (7, 3619), (11, 3709), (Start: 17 @3766 has 41 MA's), (22, 3868), (25, 3898), (29, 4009), (41, 4117), (42, 4126), (45, 4141), (46, 4144), (60, 4324), (62, 4384), (63, 4396), (64, 4420), (78, 4579), (79, 4588), (82, 4618), (89, 4681), (91, 4690), (92, 4705), (94, 4726), (95, 4738), (97, 4822),

Gene: Saronaya_6 Start: 3012, Stop: 4040, Start Num: 17

Candidate Starts for Saronaya_6:

(Start: 17 @3012 has 41 MA's), (24, 3117), (25, 3138), (33, 3264), (46, 3378), (56, 3519), (61, 3558), (62, 3600), (63, 3612), (67, 3678), (70, 3696), (75, 3744), (78, 3777), (82, 3825), (83, 3831), (91, 3897), (92, 3912), (93, 3924), (94, 3933), (95, 3945), (97, 4029),

Gene: SchottB_5 Start: 3650, Stop: 4426, Start Num: 30

Candidate Starts for SchottB_5:

(Start: 30 @3650 has 1 MA's), (39, 3695), (47, 3776), (55, 3902), (59, 3926), (75, 4130), (78, 4163), (82, 4211), (91, 4283), (92, 4298), (93, 4310), (94, 4319), (95, 4331), (97, 4415),

Gene: Sedona_7 Start: 5048, Stop: 5851, Start Num: 17

Candidate Starts for Sedona_7:

(2, 4784), (7, 4901), (11, 4991), (Start: 17 @5048 has 41 MA's), (20, 5141), (25, 5183), (29, 5294), (37, 5345), (38, 5348), (41, 5402), (42, 5411), (45, 5426), (46, 5429), (48, 5468), (74, 5546), (77, 5579), (78, 5588), (79, 5597), (82, 5636), (89, 5699), (91, 5708), (92, 5723), (94, 5744), (95, 5756), (97, 5840),

Gene: Shivanishola_5 Start: 3816, Stop: 4895, Start Num: 17

Candidate Starts for Shivanishola_5:

(11, 3759), (Start: 17 @3816 has 41 MA's), (20, 3909), (25, 3951), (29, 4062), (37, 4113), (38, 4116), (41, 4170), (42, 4179), (45, 4194), (46, 4197), (48, 4236), (60, 4377), (63, 4449), (64, 4473), (65, 4479), (78, 4632), (79, 4641), (82, 4680), (89, 4743), (91, 4752), (92, 4767), (94, 4788), (95, 4800), (97, 4884),

Gene: Sitar_6 Start: 4140, Stop: 5048, Start Num: 17

Candidate Starts for Sitar_6:

(2, 3876), (7, 3993), (11, 4083), (Start: 17 @4140 has 41 MA's), (29, 4245), (37, 4296), (38, 4299), (40, 4347), (41, 4350), (51, 4452), (60, 4530), (62, 4590), (63, 4602), (64, 4626), (65, 4632), (74, 4743), (77, 4776), (78, 4785), (82, 4833), (89, 4896), (91, 4905), (92, 4920), (94, 4941), (95, 4953), (97, 5037),

Gene: StorminNorm_6 Start: 3012, Stop: 4043, Start Num: 17

Candidate Starts for StorminNorm_6:

(Start: 17 @3012 has 41 MA's), (24, 3117), (25, 3138), (33, 3264), (46, 3378), (56, 3522), (61, 3561), (62, 3603), (63, 3615), (67, 3681), (70, 3699), (75, 3747), (78, 3780), (82, 3828), (83, 3834), (91, 3900), (92, 3915), (93, 3927), (94, 3936), (95, 3948), (97, 4032),

Gene: Stultus_5 Start: 3815, Stop: 4885, Start Num: 17

Candidate Starts for Stultus_5:

(11, 3758), (Start: 17 @3815 has 41 MA's), (20, 3908), (25, 3950), (29, 4061), (37, 4112), (38, 4115), (41, 4169), (45, 4184), (46, 4187), (48, 4226), (60, 4367), (63, 4439), (64, 4463), (65, 4469), (74, 4580), (77, 4613), (78, 4622), (82, 4670), (89, 4733), (91, 4742), (92, 4757), (94, 4778), (95, 4790), (97, 4874),

Gene: Tangent_4 Start: 3078, Stop: 3878, Start Num: 17

Candidate Starts for Tangent_4:

(Start: 17 @3078 has 41 MA's), (22, 3180), (25, 3210), (29, 3321), (37, 3372), (41, 3429), (42, 3438), (45, 3453), (46, 3456), (48, 3495), (74, 3573), (77, 3606), (78, 3615), (79, 3624), (82, 3663), (91, 3735), (92, 3750), (94, 3771), (95, 3783), (97, 3867),

Gene: Tangerine_6 Start: 3012, Stop: 4043, Start Num: 17

Candidate Starts for Tangerine_6:

(Start: 17 @3012 has 41 MA's), (24, 3117), (25, 3138), (33, 3264), (46, 3378), (56, 3522), (61, 3561), (62, 3603), (63, 3615), (67, 3681), (70, 3699), (75, 3747), (78, 3780), (82, 3828), (83, 3834), (91, 3900), (92, 3915), (93, 3927), (94, 3936), (95, 3948), (97, 4032),

Gene: Thing3_6 Start: 3108, Stop: 4217, Start Num: 17

Candidate Starts for Thing3_6:

(10, 3027), (14, 3081), (Start: 17 @3108 has 41 MA's), (19, 3198), (20, 3201), (25, 3243), (29, 3354), (37, 3405), (38, 3408), (41, 3462), (42, 3471), (45, 3486), (46, 3489), (48, 3528), (60, 3669), (62, 3729), (63, 3741), (64, 3765), (65, 3771), (72, 3876), (78, 3963), (79, 3972), (82, 4002), (84, 4020), (89, 4065), (91, 4074), (92, 4089), (94, 4110), (95, 4122), (97, 4206),

Gene: Tiamoceli_5 Start: 3264, Stop: 3893, Start Num: 43

Candidate Starts for Tiamoceli_5:

(6, 2697), (12, 2847), (21, 2997), (23, 3009), (26, 3045), (27, 3111), (35, 3177), (Start: 43 @3264 has 3 MA's), (Start: 44 @3267 has 4 MA's), (49, 3327), (52, 3378), (66, 3510), (73, 3588), (75, 3597), (81, 3672), (84, 3702), (87, 3726), (88, 3747), (96, 3843),

Gene: Twonlo_4 Start: 2419, Stop: 3042, Start Num: 44

Candidate Starts for Twonlo_4:

(Start: 43 @2416 has 3 MA's), (Start: 44 @2419 has 4 MA's), (49, 2479), (52, 2530), (66, 2662), (68, 2683), (69, 2692), (75, 2743), (81, 2818), (84, 2848), (86, 2857), (87, 2872), (90, 2902), (96, 2989),

Gene: Tycho_6 Start: 3012, Stop: 4043, Start Num: 17

Candidate Starts for Tycho_6:

(Start: 17 @3012 has 41 MA's), (24, 3117), (25, 3138), (33, 3264), (46, 3378), (56, 3522), (61, 3561), (62, 3603), (63, 3615), (67, 3681), (70, 3699), (75, 3747), (78, 3780), (82, 3828), (83, 3834), (91, 3900), (92, 3915), (93, 3927), (94, 3936), (95, 3948), (97, 4032),

Gene: YorkOnyx_6 Start: 2970, Stop: 4001, Start Num: 17

Candidate Starts for YorkOnyx_6:

(Start: 17 @2970 has 41 MA's), (24, 3075), (25, 3096), (33, 3222), (46, 3336), (56, 3480), (61, 3519), (62, 3561), (63, 3573), (67, 3639), (70, 3657), (75, 3705), (78, 3738), (82, 3786), (83, 3792), (91, 3858), (92, 3873), (93, 3885), (94, 3894), (95, 3906), (97, 3990),