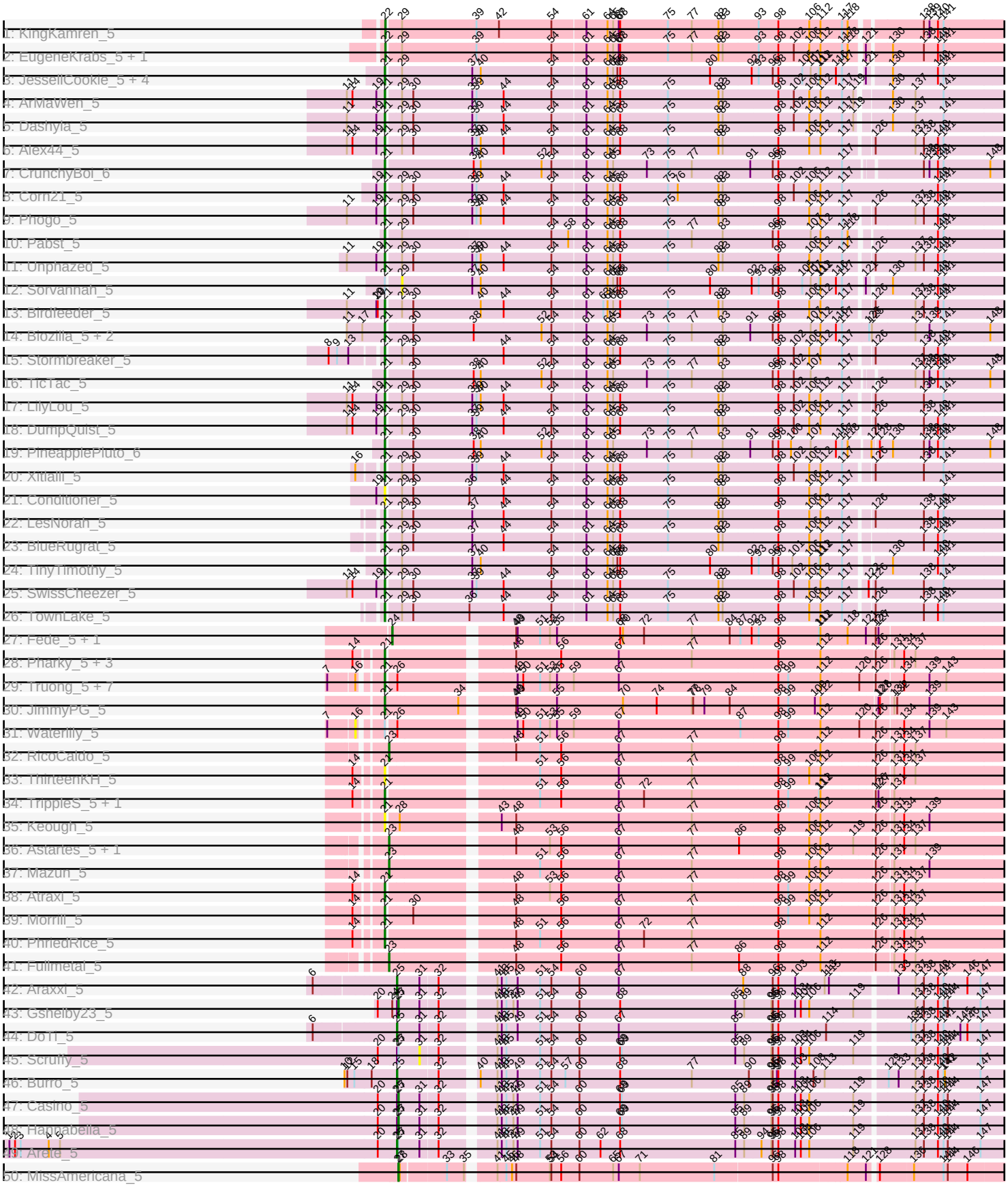
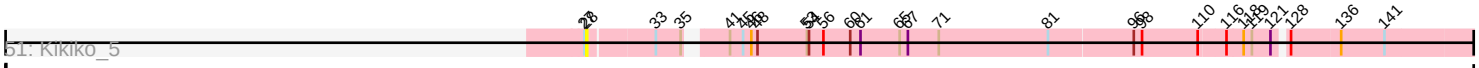
Pham 347575


1: KingKamren_5
2: EugeneKrabs_5 + 1
3: JessellCookie_5 + 4
4: ArMaWen_5
5: Dashyla_5
6: Alex44_5
7: CrunchyBoi_6
8: Corn21_5
9: Phogo_5
10: Pabst_5
11: Unphazed_5
12: Sorvannah_5
13: Birdfeeder_5
14: Biozilla_5 + 2
15: Stormbreaker_5
16: TicTac_5
17: LilyLou_5
18: DumpQuist_5
19: PineapplePluto_6
20: Xitlalli_5
21: Conditioner_5
22: LesNorah_5
23: BlueRugrat_5
24: TinyTimothy_5
25: SwissCheezer_5
26: TownLake_5
27: Fede_5 + 1
28: Pharky_5 + 3
29: Truong_5 + 7
30: JimmyPG_5
31: Waterlily_5
32: RicoCaldo_5
33: ThirteenKH_5
34: TrippleS_5 + 1
35: Keough_5
36: Astartes_5 + 1
37: Mazun_5
38: Atraxi_5
39: Morrill_5
40: FriedRice_5
41: Fullmetal_5
42: Araxxi_5
43: Gshelby23_5
44: DoTi_5
45: Scruffy_5
46: Burro_5
47: Casino_5
48: Happabella_5
49: Arete_5
50: MissAmericana_5

Pham 347575


51: Kikiko_5
28
33
35
41
54
56
60
61
65
67
71
81
96
98
110
116
121
128
136
141

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 347575 Report

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

Pham number 347575 has 71 members, 10 are drafts.

Phages represented in each track:
• Track 1 : KingKamren_5
• Track 2 : EugeneKrabs_5, Zhengyi_5
• Track 3 : JessellCookie_5, MiamiPanther_5, Wesak_5, YellowPanda_5, Salvatore2000_5
• Track 4 : ArMaWen_5
• Track 5 : Dashyla_5
• Track 6 : Alex44_5
• Track 7 : CrunchyBoi_6
• Track 8 : Corn21_5
• Track 9 : Phogo_5
• Track 10 : Pabst_5
• Track 11 : Unphazed_5
• Track 12 : Sorvannah_5
• Track 13 : Birdfeeder_5
• Track 14 : Biozilla_5, Oatly_5, HitchHiker_6
• Track 15 : Stormbreaker_5
• Track 16 : TicTac_5
• Track 17 : LilyLou_5
• Track 18 : DumpQuist_5
• Track 19 : PineapplePluto_6
• Track 20 : Xitlalli_5
• Track 21 : Conditioner_5
• Track 22 : LesNorah_5
• Track 23 : BlueRugrat_5
• Track 24 : TinyTimothy_5
• Track 25 : SwissCheezer_5
• Track 26 : TownLake_5
• Track 27 : Fede_5, Kosier_5
• Track 28 : Pharky_5, StagePhright_5, Phedro_5, Phractured_5
• Track 29 : Truong_5, JordanFarm_5, Barroma_5, AloeVera_5, Akoni_5, ShyRosie_5, Ashton_5, SoilSleuth_5
• Track 30 : JimmyPG_5
• Track 31 : Waterlily_5
• Track 32 : RicoCaldo_5
• Track 33 : ThirteenKH_5
• Track 34 : TrippleS_5, Yafa_5
• Track 35 : Keough_5

• Track 36 : Astartes_5, Moleficent_5
• Track 37 : Mazun_5
• Track 38 : Atraxi_5
• Track 39 : Morrill_5
• Track 40 : PhriedRice_5
• Track 41 : Fullmetal_5
• Track 42 : Araxxi_5
• Track 43 : Gshelby23_5
• Track 44 : DoTi_5
• Track 45 : Scruffy_5
• Track 46 : Burro_5
• Track 47 : Casino_5
• Track 48 : Hannabella_5
• Track 49 : Arete_5
• Track 50 : MissAmericana_5
• Track 51 : Kikiko_5

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

The start number called the most often in the published annotations is 21, it was called in 43 of the 61 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Akoni_5, Alex44_5, AloeVera_5, ArMaWen_5, Ashton_5, Atraxi_5, Barroma_5, Biozilla_5, Birdfeeder_5, BlueRugrat_5, Conditioner_5, Corn21_5, CrunchyBoi_6, Dashyla_5, DumpQuist_5, HitchHiker_6, JessellCookie_5, JimmyPG_5, JordanFarm_5, Keough_5, LesNorah_5, LilyLou_5, MiamiPanther_5, Morrill_5, Oatly_5, Pabst_5, Pharky_5, Phedro_5, Phogo_5, Phractured_5, PhriedRice_5, PineapplePluto_6, Salvatore2000_5, ShyRosie_5, SoilSleuth_5, StagePhright_5, Stormbreaker_5, SwissCheezer_5, ThirteenKH_5, TicTac_5, TinyTimothy_5, TownLake_5, TrippleS_5, Truong_5, Unphazed_5, Wesak_5, Xitlalli_5, Yafa_5, YellowPanda_5,

Genes that have the "Most Annotated" start but do not call it:
• Sorvannah_5, Waterlily_5,

Genes that do not have the "Most Annotated" start:
• Araxxi_5, Arete_5, Astartes_5, Burro_5, Casino_5, DoTi_5, EugeneKrabs_5, Fede_5, Fullmetal_5, Gshelby23_5, Hannabella_5, Kikiko_5, KingKamren_5, Kosier_5, Mazun_5, MissAmericana_5, Moleficent_5, RicoCaldo_5, Scruffy_5, Zhengyi_5,

Summary by start number:

Start 16:
• Found in 10 of 71 (14.1%) of genes in pham
• No Manual Annotations of this start.
• Called 10.0% of time when present
• Phage (with cluster) where this start called: Waterlily_5 (EK2),

Start 21:
• Found in 51 of 71 (71.8%) of genes in pham
• Manual Annotations of this start: 43 of 61
• Called 96.1% of time when present
• Phage (with cluster) where this start called: Akoni_5 (EK2), Alex44_5 (EK1), AloeVera_5 (EK2), ArMaWen_5 (EK1), Ashton_5 (EK2), Atraxi_5 (EK2), Barroma_5 (EK2), Biozilla_5 (EK1), Birdfeeder_5 (EK1), BlueRugrat_5 (EK1), Conditioner_5 (EK1), Corn21_5 (EK1), CrunchyBoi_6 (EK1), Dashyla_5 (EK1), DumpQuist_5 (EK1), HitchHiker_6 (EK1), JessellCookie_5 (EK1), JimmyPG_5 (EK2), JordanFarm_5 (EK2), Keough_5 (EK2), LesNorah_5 (EK1), LilyLou_5 (EK1), MiamiPanther_5 (EK1), Morrill_5 (EK2), Oatly_5 (EK1), Pabst_5 (EK1), Pharky_5 (EK2), Phedro_5 (EK2), Phogo_5 (EK1), Phractured_5 (EK2), PhriedRice_5 (EK2), PineapplePluto_6 (EK1), Salvatore2000_5 (EK1), ShyRosie_5 (EK2), SoilSleuth_5 (EK2), StagePhright_5 (EK2), Stormbreaker_5 (EK1), SwissCheezer_5 (EK1), ThirteenKH_5 (EK2), TicTac_5 (EK1), TinyTimothy_5 (EK1), TownLake_5 (EK1), TrippleS_5 (EK2), Truong_5 (EK2), Unphazed_5 (EK1), Wesak_5 (EK1), Xitlalli_5 (EK1), Yafa_5 (EK2), YellowPanda_5 (EK1),

Start 22:
• Found in 3 of 71 (4.2%) of genes in pham
• Manual Annotations of this start: 3 of 61
• Called 100.0% of time when present
• Phage (with cluster) where this start called: EugeneKrabs_5 (EK), KingKamren_5 (EK), Zhengyi_5 (EK),

Start 23:
• Found in 5 of 71 (7.0%) of genes in pham
• Manual Annotations of this start: 5 of 61
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Astartes_5 (EK2), Fullmetal_5 (EK2), Mazun_5 (EK2), Moleficent_5 (EK2), RicoCaldo_5 (EK2),

Start 24:
• Found in 3 of 71 (4.2%) of genes in pham
• Manual Annotations of this start: 2 of 61
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Fede_5 (EK2), Kosier_5 (EK2),

Start 25:
• Found in 8 of 71 (11.3%) of genes in pham
• Manual Annotations of this start: 4 of 61
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Araxxi_5 (EM1), Arete_5 (EM1), Burro_5 (EM1), DoTi_5 (EM1),

Start 27:
• Found in 7 of 71 (9.9%) of genes in pham
• Manual Annotations of this start: 4 of 61
• Called 57.1% of time when present
• Phage (with cluster) where this start called: Casino_5 (EM1), Gshelby23_5 (EM1), Hannabella_5 (EM1), MissAmericana_5 (EM2),

Start 28:

• Found in 3 of 71 (4.2%) of genes in pham
• No Manual Annotations of this start.
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Kikiko_5 (EM2),

Start 29:
• Found in 27 of 71 (38.0%) of genes in pham
• No Manual Annotations of this start.
• Called 3.7% of time when present
• Phage (with cluster) where this start called: Sorvannah_5 (EK1),

Start 31:
• Found in 7 of 71 (9.9%) of genes in pham
• No Manual Annotations of this start.
• Called 14.3% of time when present
• Phage (with cluster) where this start called: Scruffy_5 (EM1),

Summary by clusters:

There are 5 clusters represented in this pham: EK, EM1, EK2, EK1, EM2,

Info for manual annotations of cluster EK:
•Start number 22 was manually annotated 3 times for cluster EK.

Info for manual annotations of cluster EK1:
•Start number 21 was manually annotated 27 times for cluster EK1.

Info for manual annotations of cluster EK2:
•Start number 21 was manually annotated 16 times for cluster EK2.
•Start number 23 was manually annotated 5 times for cluster EK2.
•Start number 24 was manually annotated 2 times for cluster EK2.

Info for manual annotations of cluster EM1:
•Start number 25 was manually annotated 4 times for cluster EM1.
•Start number 27 was manually annotated 3 times for cluster EM1.

Info for manual annotations of cluster EM2:
•Start number 27 was manually annotated 1 time for cluster EM2.

Gene Information:

Gene: Akoni_5 Start: 4386, Stop: 3142, Start Num: 21
Candidate Starts for Akoni_5:
(7, 4476), (16, 4425), (Start: 21 @4386 has 43 MA's), (26, 4371), (49, 4146), (50, 4134), (51, 4098), (53, 4077), (55, 4062), (59, 4026), (67, 3930), (98, 3597), (99, 3576), (112, 3507), (120, 3426), (126, 3399), (134, 3345), (139, 3294), (143, 3258),

Gene: Alex44_5 Start: 4410, Stop: 3148, Start Num: 21
Candidate Starts for Alex44_5:
(11, 4488), (14, 4476), (19, 4425), (Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (37, 4233), (39, 4224), (40, 4215), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828),

(82, 3720), (83, 3711), (98, 3597), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (137, 3330), (138, 3312), (140, 3282), (141, 3270),

Gene: AloeVera_5 Start: 4386, Stop: 3142, Start Num: 21
Candidate Starts for AloeVera_5:
(7, 4476), (16, 4425), (Start: 21 @4386 has 43 MA's), (26, 4371), (49, 4146), (50, 4134), (51, 4098), (53, 4077), (55, 4062), (59, 4026), (67, 3930), (98, 3597), (99, 3576), (112, 3507), (120, 3426), (126, 3399), (134, 3345), (139, 3294), (143, 3258),

Gene: ArMaWen_5 Start: 4407, Stop: 3148, Start Num: 21
Candidate Starts for ArMaWen_5:
(11, 4485), (14, 4473), (19, 4422), (Start: 21 @4407 has 43 MA's), (29, 4380), (30, 4356), (37, 4230), (39, 4221), (44, 4164), (54, 4062), (61, 3993), (64, 3948), (65, 3936), (68, 3921), (75, 3825), (82, 3717), (83, 3708), (98, 3594), (102, 3561), (106, 3528), (112, 3504), (117, 3462), (119, 3438), (130, 3375), (137, 3330), (141, 3270),

Gene: Araxxi_5 Start: 4323, Stop: 3088, Start Num: 25
Candidate Starts for Araxxi_5:
(6, 4488), (Start: 25 @4323 has 4 MA's), (31, 4275), (32, 4239), (41, 4140), (43, 4131), (45, 4122), (49, 4098), (51, 4050), (54, 4026), (60, 3966), (67, 3882), (88, 3618), (96, 3555), (98, 3543), (103, 3507), (113, 3447), (115, 3441), (133, 3309), (137, 3273), (138, 3255), (140, 3225), (141, 3213), (146, 3165), (147, 3138),

Gene: Arete_5 Start: 4297, Stop: 3065, Start Num: 25
Candidate Starts for Arete_5:
(1, 5119), (2, 5107), (3, 5095), (4, 5035), (5, 5011), (20, 4336), (Start: 25 @4297 has 4 MA's), (Start: 27 @4294 has 4 MA's), (31, 4249), (32, 4213), (41, 4114), (43, 4105), (45, 4096), (47, 4081), (49, 4072), (51, 4024), (54, 4000), (60, 3940), (62, 3895), (68, 3853), (85, 3607), (89, 3589), (94, 3553), (95, 3532), (96, 3529), (98, 3517), (103, 3481), (104, 3469), (106, 3454), (119, 3364), (137, 3250), (138, 3232), (140, 3202), (141, 3190), (144, 3181), (147, 3115),

Gene: Ashton_5 Start: 4390, Stop: 3146, Start Num: 21
Candidate Starts for Ashton_5:
(7, 4480), (16, 4429), (Start: 21 @4390 has 43 MA's), (26, 4375), (49, 4150), (50, 4138), (51, 4102), (53, 4081), (55, 4066), (59, 4030), (67, 3934), (98, 3601), (99, 3580), (112, 3511), (120, 3430), (126, 3403), (134, 3349), (139, 3298), (143, 3262),

Gene: Astartes_5 Start: 4380, Stop: 3136, Start Num: 23
Candidate Starts for Astartes_5:
(Start: 23 @4380 has 5 MA's), (48, 4143), (53, 4071), (56, 4047), (67, 3924), (77, 3771), (86, 3672), (98, 3591), (106, 3525), (112, 3501), (119, 3432), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: Atraxi_5 Start: 4381, Stop: 3137, Start Num: 21
Candidate Starts for Atraxi_5:
(14, 4432), (Start: 21 @4381 has 43 MA's), (48, 4144), (53, 4072), (56, 4048), (67, 3925), (77, 3772), (98, 3592), (99, 3571), (106, 3526), (112, 3502), (126, 3394), (131, 3361), (134, 3340), (137, 3319),

Gene: Barroma_5 Start: 4386, Stop: 3142, Start Num: 21
Candidate Starts for Barroma_5:
(7, 4476), (16, 4425), (Start: 21 @4386 has 43 MA's), (26, 4371), (49, 4146), (50, 4134), (51, 4098), (53, 4077), (55, 4062), (59, 4026), (67, 3930), (98, 3597), (99, 3576), (112, 3507), (120, 3426), (126, 3399), (134, 3345), (139, 3294), (143, 3258),

Gene: Biozilla_5 Start: 4418, Stop: 3147, Start Num: 21
Candidate Starts for Biozilla_5:
(11, 4499), (17, 4466), (Start: 21 @4418 has 43 MA's), (30, 4367), (38, 4244), (52, 4100), (54, 4079), (61, 4010), (64, 3965), (65, 3953), (73, 3884), (75, 3842), (77, 3791), (83, 3725), (91, 3668), (96, 3623), (98, 3611), (107, 3542), (112, 3521), (116, 3491), (117, 3479), (123, 3422), (125, 3416), (137, 3329), (139, 3299), (141, 3269), (148, 3170),

Gene: Birdfeeder_5 Start: 4410, Stop: 3148, Start Num: 21
Candidate Starts for Birdfeeder_5:
(11, 4488), (19, 4425), (20, 4422), (Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (40, 4215), (44, 4167), (54, 4065), (61, 3996), (63, 3960), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (137, 3330), (138, 3312), (140, 3282), (141, 3270),

Gene: BlueRugrat_5 Start: 4410, Stop: 3148, Start Num: 21
Candidate Starts for BlueRugrat_5:
(Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (37, 4233), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (106, 3531), (112, 3507), (117, 3465), (138, 3312), (140, 3282), (141, 3270),

Gene: Burro_5 Start: 4278, Stop: 3043, Start Num: 25
Candidate Starts for Burro_5:
(10, 4389), (12, 4383), (15, 4368), (18, 4332), (Start: 25 @4278 has 4 MA's), (32, 4194), (40, 4131), (41, 4095), (43, 4086), (45, 4077), (49, 4053), (51, 4005), (54, 3981), (57, 3951), (60, 3921), (68, 3834), (77, 3681), (90, 3561), (95, 3513), (96, 3510), (97, 3501), (98, 3498), (103, 3462), (108, 3426), (113, 3402), (129, 3285), (133, 3264), (137, 3228), (138, 3210), (140, 3180), (141, 3168), (142, 3165), (147, 3093),

Gene: Casino_5 Start: 4294, Stop: 3065, Start Num: 27
Candidate Starts for Casino_5:
(20, 4336), (Start: 25 @4297 has 4 MA's), (Start: 27 @4294 has 4 MA's), (31, 4249), (32, 4213), (41, 4114), (43, 4105), (45, 4096), (47, 4081), (49, 4072), (51, 4024), (54, 4000), (60, 3940), (68, 3853), (69, 3850), (85, 3607), (89, 3589), (95, 3532), (96, 3529), (98, 3517), (103, 3481), (104, 3469), (106, 3454), (119, 3364), (137, 3250), (138, 3232), (140, 3202), (141, 3190), (144, 3181), (147, 3115),

Gene: Conditioner_5 Start: 4431, Stop: 3148, Start Num: 21
Candidate Starts for Conditioner_5:
(19, 4446), (Start: 21 @4431 has 43 MA's), (29, 4404), (30, 4380), (36, 4260), (44, 4188), (54, 4086), (61, 4017), (64, 3972), (65, 3960), (68, 3945), (75, 3849), (82, 3741), (83, 3732), (98, 3618), (106, 3552), (112, 3528), (117, 3486), (141, 3270),

Gene: Corn21_5 Start: 4432, Stop: 3149, Start Num: 21
Candidate Starts for Corn21_5:
(19, 4447), (Start: 21 @4432 has 43 MA's), (29, 4405), (30, 4381), (37, 4255), (39, 4246), (44, 4189), (54, 4087), (61, 4018), (64, 3973), (65, 3961), (68, 3946), (75, 3850), (76, 3829), (82, 3742), (83, 3733), (98, 3619), (102, 3586), (106, 3553), (112, 3529), (117, 3487), (140, 3283), (141, 3271),

Gene: CrunchyBoi_6 Start: 4397, Stop: 3147, Start Num: 21
Candidate Starts for CrunchyBoi_6:
(Start: 21 @4397 has 43 MA's), (38, 4223), (40, 4208), (52, 4079), (54, 4058), (61, 3989), (64, 3944), (65, 3932), (73, 3863), (75, 3821), (77, 3770), (91, 3647), (96, 3602), (98, 3590), (117, 3458), (138, 3311), (139, 3299), (140, 3281), (141, 3269), (148, 3170),

Gene: Dashyla_5 Start: 4407, Stop: 3148, Start Num: 21
Candidate Starts for Dashyla_5:
(11, 4485), (19, 4422), (Start: 21 @4407 has 43 MA's), (29, 4380), (30, 4356), (37, 4230), (39, 4221), (44, 4164), (54, 4062), (61, 3993), (64, 3948), (65, 3936), (68, 3921), (75, 3825), (82, 3717), (83, 3708), (98, 3594), (102, 3561), (106, 3528), (112, 3504), (117, 3462), (119, 3438), (130, 3375), (137, 3330), (141, 3270),

Gene: DoTi_5 Start: 4320, Stop: 3088, Start Num: 25
Candidate Starts for DoTi_5:
(6, 4485), (Start: 25 @4320 has 4 MA's), (31, 4272), (32, 4236), (41, 4137), (43, 4128), (45, 4119), (49, 4095), (51, 4047), (54, 4023), (60, 3963), (67, 3879), (85, 3630), (95, 3555), (96, 3552), (98, 3540), (114, 3441), (135, 3282), (137, 3273), (138, 3255), (140, 3225), (141, 3213), (145, 3180), (146, 3165), (147, 3138),

Gene: DumpQuist_5 Start: 4410, Stop: 3148, Start Num: 21
Candidate Starts for DumpQuist_5:
(11, 4488), (14, 4476), (19, 4425), (Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (37, 4233), (39, 4224), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (102, 3564), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (138, 3312), (140, 3282), (141, 3270),

Gene: EugeneKrabs_5 Start: 4411, Stop: 3161, Start Num: 22
Candidate Starts for EugeneKrabs_5:
(Start: 22 @4411 has 3 MA's), (29, 4384), (39, 4231), (54, 4072), (61, 4003), (64, 3958), (65, 3946), (67, 3934), (68, 3931), (75, 3835), (77, 3784), (82, 3727), (83, 3718), (93, 3646), (98, 3604), (102, 3571), (106, 3538), (112, 3514), (117, 3472), (118, 3460), (121, 3436), (130, 3391), (138, 3325), (140, 3295), (141, 3283),

Gene: Fede_5 Start: 4411, Stop: 3161, Start Num: 24
Candidate Starts for Fede_5:
(Start: 24 @4411 has 2 MA's), (48, 4177), (49, 4174), (51, 4126), (53, 4105), (55, 4090), (68, 3955), (70, 3949), (72, 3904), (77, 3805), (84, 3724), (87, 3703), (92, 3679), (93, 3667), (98, 3625), (111, 3538), (112, 3535), (118, 3478), (121, 3439), (126, 3421), (127, 3415),

Gene: Fullmetal_5 Start: 4377, Stop: 3136, Start Num: 23
Candidate Starts for Fullmetal_5:
(Start: 23 @4377 has 5 MA's), (48, 4140), (56, 4044), (67, 3921), (77, 3768), (86, 3669), (98, 3588), (112, 3498), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: Gshelby23_5 Start: 4294, Stop: 3065, Start Num: 27
Candidate Starts for Gshelby23_5:
(20, 4336), (Start: 24 @4306 has 2 MA's), (Start: 25 @4297 has 4 MA's), (Start: 27 @4294 has 4 MA's), (31, 4249), (32, 4213), (41, 4114), (43, 4105), (45, 4096), (47, 4081), (49, 4072), (51, 4024), (54, 4000), (60, 3940), (68, 3853), (85, 3607), (89, 3589), (95, 3532), (96, 3529), (98, 3517), (103, 3481), (104, 3469), (106, 3454), (119, 3364), (137, 3250), (138, 3232), (140, 3202), (141, 3190), (144, 3181), (147, 3115),

Gene: Hannabella_5 Start: 4294, Stop: 3065, Start Num: 27
Candidate Starts for Hannabella_5:
(20, 4336), (Start: 25 @4297 has 4 MA's), (Start: 27 @4294 has 4 MA's), (31, 4249), (32, 4213), (41, 4114), (43, 4105), (45, 4096), (47, 4081), (49, 4072), (51, 4024), (54, 4000), (60, 3940), (68, 3853), (69, 3850), (85, 3607), (89, 3589), (95, 3532), (96, 3529), (98, 3517), (103, 3481), (104, 3469), (106, 3454), (119, 3364), (137, 3250), (138, 3232), (140, 3202), (141, 3190), (144, 3181), (147, 3115),

Gene: HitchHiker_6 Start: 4418, Stop: 3147, Start Num: 21
Candidate Starts for HitchHiker_6:
(11, 4499), (17, 4466), (Start: 21 @4418 has 43 MA's), (30, 4367), (38, 4244), (52, 4100), (54, 4079), (61, 4010), (64, 3965), (65, 3953), (73, 3884), (75, 3842), (77, 3791), (83, 3725), (91, 3668), (96, 3623), (98, 3611), (107, 3542), (112, 3521), (116, 3491), (117, 3479), (123, 3422), (125, 3416), (137, 3329), (139, 3299), (141, 3269), (148, 3170),

Gene: JessellCookie_5 Start: 4411, Stop: 3155, Start Num: 21
Candidate Starts for JessellCookie_5:
(Start: 21 @4411 has 43 MA's), (29, 4384), (37, 4234), (40, 4216), (54, 4066), (61, 3997), (64, 3952), (65, 3940), (66, 3931), (68, 3925), (80, 3739), (92, 3652), (93, 3640), (96, 3610), (98, 3598), (105, 3547), (107, 3529), (111, 3511), (112, 3508), (116, 3478), (117, 3466), (121, 3430), (130, 3385), (140, 3289), (141, 3277),

Gene: JimmyPG_5 Start: 4393, Stop: 3146, Start Num: 21
Candidate Starts for JimmyPG_5:
(Start: 21 @4393 has 43 MA's), (34, 4243), (48, 4150), (49, 4147), (55, 4063), (70, 3922), (74, 3850), (77, 3778), (78, 3775), (79, 3751), (84, 3697), (98, 3598), (99, 3577), (109, 3520), (112, 3508), (127, 3397), (128, 3394), (131, 3370), (132, 3364), (139, 3298),

Gene: JordanFarm_5 Start: 4386, Stop: 3142, Start Num: 21
Candidate Starts for JordanFarm_5:
(7, 4476), (16, 4425), (Start: 21 @4386 has 43 MA's), (26, 4371), (49, 4146), (50, 4134), (51, 4098), (53, 4077), (55, 4062), (59, 4026), (67, 3930), (98, 3597), (99, 3576), (112, 3507), (120, 3426), (126, 3399), (134, 3345), (139, 3294), (143, 3258),

Gene: Keough_5 Start: 4380, Stop: 3136, Start Num: 21
Candidate Starts for Keough_5:
(Start: 21 @4380 has 43 MA's), (28, 4359), (43, 4173), (48, 4143), (67, 3924), (77, 3771), (98, 3591), (106, 3525), (112, 3501), (126, 3393), (131, 3360), (134, 3339), (139, 3288),

Gene: Kikiko_5 Start: 4273, Stop: 3059, Start Num: 28
Candidate Starts for Kikiko_5:
(Start: 27 @4276 has 4 MA's), (28, 4273), (33, 4183), (35, 4147), (41, 4105), (45, 4087), (46, 4075), (48, 4066), (53, 3994), (54, 3991), (56, 3970), (60, 3931), (61, 3916), (65, 3859), (67, 3847), (71, 3802), (81, 3643), (96, 3523), (98, 3511), (110, 3430), (116, 3397), (118, 3373), (119, 3361), (121, 3334), (128, 3319), (136, 3250), (141, 3187),

Gene: KingKamren_5 Start: 4411, Stop: 3161, Start Num: 22
Candidate Starts for KingKamren_5:
(Start: 22 @4411 has 3 MA's), (29, 4384), (39, 4231), (42, 4183), (54, 4072), (61, 4003), (64, 3958), (65, 3946), (67, 3934), (68, 3931), (75, 3835), (77, 3784), (82, 3727), (83, 3718), (93, 3646), (98, 3604), (106, 3538), (112, 3514), (117, 3472), (118, 3460), (138, 3325), (139, 3313), (140, 3295), (141, 3283),

Gene: Kosier_5 Start: 4411, Stop: 3161, Start Num: 24
Candidate Starts for Kosier_5:
(Start: 24 @4411 has 2 MA's), (48, 4177), (49, 4174), (51, 4126), (53, 4105), (55, 4090), (68, 3955), (70, 3949), (72, 3904), (77, 3805), (84, 3724), (87, 3703), (92, 3679), (93, 3667), (98, 3625), (111, 3538), (112, 3535), (118, 3478), (121, 3439), (126, 3421), (127, 3415),

Gene: LesNorah_5 Start: 4410, Stop: 3148, Start Num: 21
Candidate Starts for LesNorah_5:

(Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (37, 4233), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (138, 3312), (140, 3282), (141, 3270),

Gene: LilyLou_5 Start: 4410, Stop: 3148, Start Num: 21
Candidate Starts for LilyLou_5:
(11, 4488), (14, 4476), (19, 4425), (Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (37, 4233), (39, 4224), (40, 4215), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (102, 3564), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (138, 3312), (141, 3270),

Gene: Mazun_5 Start: 4380, Stop: 3136, Start Num: 23
Candidate Starts for Mazun_5:
(Start: 23 @4380 has 5 MA's), (51, 4092), (56, 4047), (67, 3924), (77, 3771), (98, 3591), (106, 3525), (112, 3501), (126, 3393), (131, 3360), (139, 3288),

Gene: MiamiPanther_5 Start: 4411, Stop: 3155, Start Num: 21
Candidate Starts for MiamiPanther_5:
(Start: 21 @4411 has 43 MA's), (29, 4384), (37, 4234), (40, 4216), (54, 4066), (61, 3997), (64, 3952), (65, 3940), (66, 3931), (68, 3925), (80, 3739), (92, 3652), (93, 3640), (96, 3610), (98, 3598), (105, 3547), (107, 3529), (111, 3511), (112, 3508), (116, 3478), (117, 3466), (121, 3430), (130, 3385), (140, 3289), (141, 3277),

Gene: MissAmericana_5 Start: 4276, Stop: 3059, Start Num: 27
Candidate Starts for MissAmericana_5:
(Start: 27 @4276 has 4 MA's), (28, 4273), (33, 4183), (35, 4147), (41, 4105), (45, 4087), (46, 4075), (48, 4066), (53, 3994), (54, 3991), (56, 3970), (60, 3931), (65, 3859), (67, 3847), (71, 3802), (81, 3643), (96, 3523), (98, 3511), (118, 3373), (121, 3334), (128, 3319), (136, 3250), (141, 3187), (144, 3178), (146, 3139),

Gene: Moleficent_5 Start: 4380, Stop: 3136, Start Num: 23
Candidate Starts for Moleficent_5:
(Start: 23 @4380 has 5 MA's), (48, 4143), (53, 4071), (56, 4047), (67, 3924), (77, 3771), (86, 3672), (98, 3591), (106, 3525), (112, 3501), (119, 3432), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: Morrill_5 Start: 4380, Stop: 3136, Start Num: 21
Candidate Starts for Morrill_5:
(14, 4431), (Start: 21 @4380 has 43 MA's), (30, 4332), (48, 4143), (56, 4047), (67, 3924), (77, 3771), (98, 3591), (99, 3570), (106, 3525), (112, 3501), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: Oatly_5 Start: 4418, Stop: 3147, Start Num: 21
Candidate Starts for Oatly_5:
(11, 4499), (17, 4466), (Start: 21 @4418 has 43 MA's), (30, 4367), (38, 4244), (52, 4100), (54, 4079), (61, 4010), (64, 3965), (65, 3953), (73, 3884), (75, 3842), (77, 3791), (83, 3725), (91, 3668), (96, 3623), (98, 3611), (107, 3542), (112, 3521), (116, 3491), (117, 3479), (123, 3422), (125, 3416), (137, 3329), (139, 3299), (141, 3269), (148, 3170),

Gene: Pabst_5 Start: 4390, Stop: 3143, Start Num: 21
Candidate Starts for Pabst_5:
(Start: 21 @4390 has 43 MA's), (29, 4363), (54, 4054), (58, 4018), (61, 3985), (64, 3940), (65, 3928), (68, 3913), (75, 3817), (77, 3766), (83, 3700), (96, 3598), (98, 3586), (107, 3517), (112, 3496), (117, 3454), (118, 3442), (140, 3277), (141, 3265),

Gene: Pharky_5 Start: 4377, Stop: 3136, Start Num: 21
Candidate Starts for Pharky_5:
(14, 4428), (Start: 21 @4377 has 43 MA's), (48, 4140), (56, 4044), (67, 3921), (77, 3768), (98, 3588), (112, 3498), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: Phedro_5 Start: 4377, Stop: 3136, Start Num: 21
Candidate Starts for Phedro_5:
(14, 4428), (Start: 21 @4377 has 43 MA's), (48, 4140), (56, 4044), (67, 3921), (77, 3768), (98, 3588), (112, 3498), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: Phogo_5 Start: 4410, Stop: 3136, Start Num: 21
Candidate Starts for Phogo_5:
(11, 4488), (19, 4425), (Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (37, 4233), (39, 4224), (40, 4215), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (137, 3330), (138, 3312), (140, 3282), (141, 3270),

Gene: Phractured_5 Start: 4377, Stop: 3136, Start Num: 21
Candidate Starts for Phractured_5:
(14, 4428), (Start: 21 @4377 has 43 MA's), (48, 4140), (56, 4044), (67, 3921), (77, 3768), (98, 3588), (112, 3498), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: PhriedRice_5 Start: 4377, Stop: 3136, Start Num: 21
Candidate Starts for PhriedRice_5:
(14, 4428), (Start: 21 @4377 has 43 MA's), (48, 4140), (51, 4089), (56, 4044), (67, 3921), (72, 3867), (77, 3768), (98, 3588), (112, 3498), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: PineapplePluto_6 Start: 4406, Stop: 3147, Start Num: 21
Candidate Starts for PineapplePluto_6:
(Start: 21 @4406 has 43 MA's), (30, 4355), (38, 4232), (40, 4217), (52, 4088), (54, 4067), (61, 3998), (64, 3953), (65, 3941), (73, 3872), (75, 3830), (77, 3779), (83, 3713), (91, 3656), (96, 3611), (98, 3599), (100, 3572), (107, 3530), (116, 3479), (117, 3467), (118, 3455), (124, 3413), (128, 3401), (130, 3374), (138, 3311), (139, 3299), (140, 3281), (141, 3269), (148, 3170),

Gene: RicoCaldo_5 Start: 4377, Stop: 3136, Start Num: 23
Candidate Starts for RicoCaldo_5:
(Start: 23 @4377 has 5 MA's), (48, 4140), (51, 4089), (56, 4044), (67, 3921), (77, 3768), (98, 3588), (112, 3498), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: Salvatore2000_5 Start: 4411, Stop: 3155, Start Num: 21
Candidate Starts for Salvatore2000_5:
(Start: 21 @4411 has 43 MA's), (29, 4384), (37, 4234), (40, 4216), (54, 4066), (61, 3997), (64, 3952), (65, 3940), (66, 3931), (68, 3925), (80, 3739), (92, 3652), (93, 3640), (96, 3610), (98, 3598), (105, 3547), (107, 3529), (111, 3511), (112, 3508), (116, 3478), (117, 3466), (121, 3430), (130, 3385), (140, 3289), (141, 3277),

Gene: Scruffy_5 Start: 4249, Stop: 3065, Start Num: 31
Candidate Starts for Scruffy_5:
(20, 4336), (Start: 25 @4297 has 4 MA's), (Start: 27 @4294 has 4 MA's), (31, 4249), (32, 4213), (41, 4114), (43, 4105), (45, 4096), (51, 4024), (54, 4000), (60, 3940), (68, 3853), (69, 3850), (85, 3607), (89, 3589), (95, 3532), (96, 3529), (98, 3517), (103, 3481), (104, 3469), (106, 3454), (119, 3364), (137, 3250), (138, 3232), (140, 3202), (141, 3190), (144, 3181), (147, 3115),

Gene: ShyRosie_5 Start: 4386, Stop: 3142, Start Num: 21
Candidate Starts for ShyRosie_5:
(7, 4476), (16, 4425), (Start: 21 @4386 has 43 MA's), (26, 4371), (49, 4146), (50, 4134), (51, 4098), (53, 4077), (55, 4062), (59, 4026), (67, 3930), (98, 3597), (99, 3576), (112, 3507), (120, 3426), (126, 3399), (134, 3345), (139, 3294), (143, 3258),

Gene: SoilSleuth_5 Start: 4386, Stop: 3142, Start Num: 21
Candidate Starts for SoilSleuth_5:
(7, 4476), (16, 4425), (Start: 21 @4386 has 43 MA's), (26, 4371), (49, 4146), (50, 4134), (51, 4098), (53, 4077), (55, 4062), (59, 4026), (67, 3930), (98, 3597), (99, 3576), (112, 3507), (120, 3426), (126, 3399), (134, 3345), (139, 3294), (143, 3258),

Gene: Sorvannah_5 Start: 4384, Stop: 3155, Start Num: 29
Candidate Starts for Sorvannah_5:
(Start: 21 @4411 has 43 MA's), (29, 4384), (37, 4234), (40, 4216), (54, 4066), (61, 3997), (64, 3952), (65, 3940), (66, 3931), (68, 3925), (80, 3739), (92, 3652), (93, 3640), (96, 3610), (98, 3598), (105, 3547), (107, 3529), (111, 3511), (112, 3508), (116, 3478), (117, 3466), (121, 3430), (130, 3385), (140, 3289), (141, 3277),

Gene: StagePhright_5 Start: 4377, Stop: 3136, Start Num: 21
Candidate Starts for StagePhright_5:
(14, 4428), (Start: 21 @4377 has 43 MA's), (48, 4140), (56, 4044), (67, 3921), (77, 3768), (98, 3588), (112, 3498), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: Stormbreaker_5 Start: 4410, Stop: 3136, Start Num: 21
Candidate Starts for Stormbreaker_5:
(8, 4509), (9, 4491), (13, 4467), (Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (102, 3564), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (138, 3312), (140, 3282), (141, 3270),

Gene: SwissCheezer_5 Start: 4410, Stop: 3148, Start Num: 21
Candidate Starts for SwissCheezer_5:
(11, 4488), (14, 4476), (19, 4425), (Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (37, 4233), (39, 4224), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (102, 3564), (106, 3531), (112, 3507), (117, 3465), (122, 3420), (126, 3411), (138, 3312), (141, 3270),

Gene: ThirteenKH_5 Start: 4380, Stop: 3136, Start Num: 21
Candidate Starts for ThirteenKH_5:
(14, 4431), (Start: 21 @4380 has 43 MA's), (51, 4092), (56, 4047), (67, 3924), (77, 3771), (98, 3591), (99, 3570), (106, 3525), (112, 3501), (126, 3393), (131, 3360), (134, 3339), (137, 3318),

Gene: TicTac_5 Start: 4397, Stop: 3147, Start Num: 21
Candidate Starts for TicTac_5:
(Start: 21 @4397 has 43 MA's), (30, 4346), (38, 4223), (40, 4208), (52, 4079), (54, 4058), (61, 3989), (64, 3944), (65, 3932), (73, 3863), (75, 3821), (77, 3770), (83, 3704), (96, 3602), (98, 3590), (102, 3557), (107, 3521), (117, 3458), (137, 3329), (138, 3311), (139, 3299), (140, 3281), (141, 3269), (148, 3170),

Gene: TinyTimothy_5 Start: 4411, Stop: 3155, Start Num: 21
Candidate Starts for TinyTimothy_5:
(Start: 21 @4411 has 43 MA's), (29, 4384), (37, 4234), (40, 4216), (54, 4066), (61, 3997), (64, 3952), (65, 3940), (66, 3931), (68, 3925), (80, 3739), (92, 3652), (93, 3640), (96, 3610), (98, 3598), (101,

3568), (106, 3532), (111, 3511), (112, 3508), (117, 3466), (130, 3385), (140, 3289), (141, 3277),

Gene: TownLake_5 Start: 4410, Stop: 3148, Start Num: 21
Candidate Starts for TownLake_5:
(Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (36, 4239), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (138, 3312), (140, 3282), (141, 3270),

Gene: TrippleS_5 Start: 4380, Stop: 3136, Start Num: 21
Candidate Starts for TrippleS_5:
(14, 4431), (Start: 21 @4380 has 43 MA's), (51, 4092), (56, 4047), (67, 3924), (72, 3870), (77, 3771), (98, 3591), (99, 3570), (111, 3504), (112, 3501), (126, 3393), (127, 3387), (131, 3360),

Gene: Truong_5 Start: 4386, Stop: 3142, Start Num: 21
Candidate Starts for Truong_5:
(7, 4476), (16, 4425), (Start: 21 @4386 has 43 MA's), (26, 4371), (49, 4146), (50, 4134), (51, 4098), (53, 4077), (55, 4062), (59, 4026), (67, 3930), (98, 3597), (99, 3576), (112, 3507), (120, 3426), (126, 3399), (134, 3345), (139, 3294), (143, 3258),

Gene: Unphazed_5 Start: 4410, Stop: 3136, Start Num: 21
Candidate Starts for Unphazed_5:
(11, 4488), (19, 4425), (Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (37, 4233), (39, 4224), (40, 4215), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (137, 3330), (138, 3312), (140, 3282), (141, 3270),

Gene: Waterlily_5 Start: 4425, Stop: 3142, Start Num: 16
Candidate Starts for Waterlily_5:
(7, 4476), (16, 4425), (Start: 21 @4386 has 43 MA's), (26, 4371), (49, 4146), (50, 4134), (51, 4098), (53, 4077), (55, 4062), (59, 4026), (67, 3930), (87, 3675), (98, 3597), (99, 3576), (112, 3507), (120, 3426), (126, 3399), (134, 3345), (139, 3294), (143, 3258),

Gene: Wesak_5 Start: 4411, Stop: 3155, Start Num: 21
Candidate Starts for Wesak_5:
(Start: 21 @4411 has 43 MA's), (29, 4384), (37, 4234), (40, 4216), (54, 4066), (61, 3997), (64, 3952), (65, 3940), (66, 3931), (68, 3925), (80, 3739), (92, 3652), (93, 3640), (96, 3610), (98, 3598), (105, 3547), (107, 3529), (111, 3511), (112, 3508), (116, 3478), (117, 3466), (121, 3430), (130, 3385), (140, 3289), (141, 3277),

Gene: Xitlalli_5 Start: 4410, Stop: 3148, Start Num: 21
Candidate Starts for Xitlalli_5:
(16, 4452), (Start: 21 @4410 has 43 MA's), (29, 4383), (30, 4359), (37, 4233), (39, 4224), (44, 4167), (54, 4065), (61, 3996), (64, 3951), (65, 3939), (68, 3924), (75, 3828), (82, 3720), (83, 3711), (98, 3597), (102, 3564), (106, 3531), (112, 3507), (117, 3465), (126, 3411), (138, 3312), (141, 3270),

Gene: Yafa_5 Start: 4380, Stop: 3136, Start Num: 21
Candidate Starts for Yafa_5:
(14, 4431), (Start: 21 @4380 has 43 MA's), (51, 4092), (56, 4047), (67, 3924), (72, 3870), (77, 3771), (98, 3591), (99, 3570), (111, 3504), (112, 3501), (126, 3393), (127, 3387), (131, 3360),

Gene: YellowPanda_5 Start: 4411, Stop: 3155, Start Num: 21
Candidate Starts for YellowPanda_5:

(Start: 21 @4411 has 43 MA's), (29, 4384), (37, 4234), (40, 4216), (54, 4066), (61, 3997), (64, 3952), (65, 3940), (66, 3931), (68, 3925), (80, 3739), (92, 3652), (93, 3640), (96, 3610), (98, 3598), (105, 3547), (107, 3529), (111, 3511), (112, 3508), (116, 3478), (117, 3466), (121, 3430), (130, 3385), (140, 3289), (141, 3277),

Gene: Zhengyi_5 Start: 4411, Stop: 3161, Start Num: 22
Candidate Starts for Zhengyi_5:
(Start: 22 @4411 has 3 MA's), (29, 4384), (39, 4231), (54, 4072), (61, 4003), (64, 3958), (65, 3946), (67, 3934), (68, 3931), (75, 3835), (77, 3784), (82, 3727), (83, 3718), (93, 3646), (98, 3604), (102, 3571), (106, 3538), (112, 3514), (117, 3472), (118, 3460), (121, 3436), (130, 3391), (138, 3325), (140, 3295), (141, 3283),