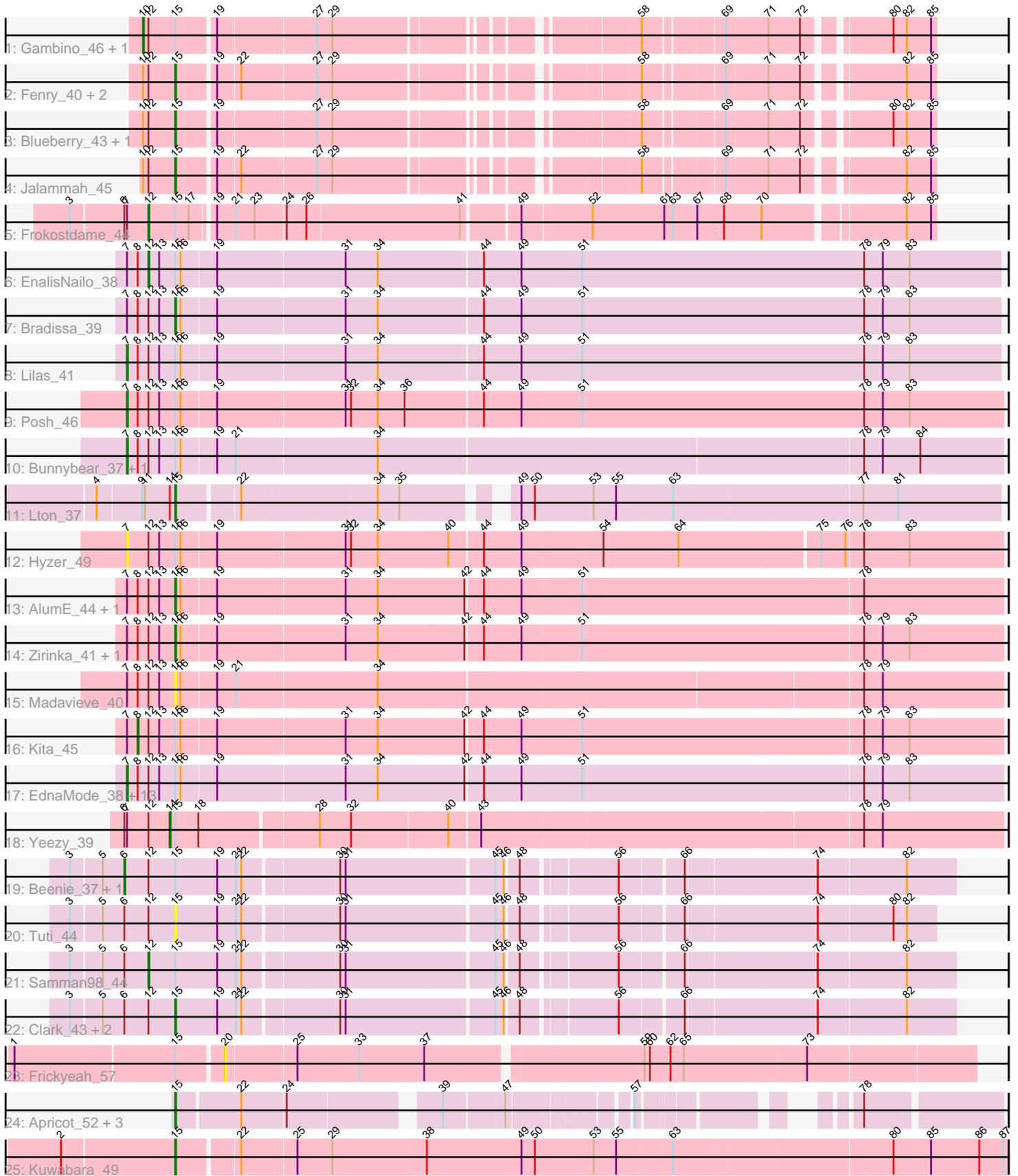# Pham 282269

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 282269 Report

This analysis was run 02/23/26 on database version 636.

Pham number 282269 has 51 members, 4 are drafts.

Phages represented in each track:
• Track 1 : Gambino_46, Azula_44
• Track 2 : Fenry_40, Wocket_42, KappaFarmDelta_43
• Track 3 : Blueberry_43, MissRona_44
• Track 4 : Jalammah_45
• Track 5 : Frokostdame_44
• Track 6 : EnalisNailo_38
• Track 7 : Bradissa_39
• Track 8 : Lilas_41
• Track 9 : Posh_46
• Track 10 : Bunnybear_37, Maridalia_45
• Track 11 : Lton_37
• Track 12 : Hyzer_49
• Track 13 : AlumE_44, BoyNamedSue_44
• Track 14 : Zirinka_41, Bialota_42
• Track 15 : Madavieve_40
• Track 16 : Kita_45
• Track 17 : EdnaMode_38, Polly_41, Eudoria_44, Pickett_37, SoilAssassin_39, LordFarquaad_41, Tayonia_44, Trumpet_44, Neobush_44, Antonio_44, Suscepit_44, Zameen_44, Attis_39, Yeet412_39
• Track 18 : Yeezy_39
• Track 19 : Beenie_37, Sekhmet_44
• Track 20 : Tuti_44
• Track 21 : Samman98_44
• Track 22 : Clark_43, Invectra_45, MichaelScott_44
• Track 23 : Frickyeah_57
• Track 24 : Apricot_52, Crater_52, PhorbesPhlower_36, Phistory_54
• Track 25 : Kuwabara_49

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

The start number called the most often in the published annotations is 15, it was called in 20 of the 47 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• AlumE_44, Apricot_52, Bialota_42, Blueberry_43, BoyNamedSue_44, Bradissa_39, Clark_43, Crater_52, Fenry_40, Invectra_45, Jalammah_45, KappaFarmDelta_43, Kuwabara_49, Lton_37, Madavieve_40, MichaelScott_44, MissRona_44, Phistory_54, PhorbesPhlower_36, Tuti_44, Wocket_42, Zirinka_41,

Genes that have the "Most Annotated" start but do not call it:
• Antonio_44, Attis_39, Azula_44, Beenie_37, Bunnybear_37, EdnaMode_38, EnalisNailo_38, Eudoria_44, Frickyeah_57, Frokostdame_44, Gambino_46, Hyzer_49, Kita_45, Lilas_41, LordFarquaad_41, Maridalia_45, Neobush_44, Pickett_37, Polly_41, Posh_46, Samman98_44, Sekhmet_44, SoilAssassin_39, Suscepit_44, Tayonia_44, Trumpet_44, Yeet412_39, Yeezy_39, Zameen_44,

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

Summary by start number:

Start 6:
• Found in 9 of 51 (17.6%) of genes in pham
• Manual Annotations of this start: 2 of 47
• Called 22.2% of time when present
• Phage (with cluster) where this start called: Beenie_37 (CZ4), Sekhmet_44 (CZ4),

Start 7:
• Found in 29 of 51 (56.9%) of genes in pham
• Manual Annotations of this start: 18 of 47
• Called 65.5% of time when present
• Phage (with cluster) where this start called: Antonio_44 (CZ1), Attis_39 (CZ2), Bunnybear_37 (CZ), EdnaMode_38 (CZ2), Eudoria_44 (CZ1), Hyzer_49 (CZ1), Lilas_41 (CY1), LordFarquaad_41 (CZ2), Maridalia_45 (CZ1), Neobush_44 (CZ1), Pickett_37 (CZ2), Polly_41 (CZ1), Posh_46 (CY4), SoilAssassin_39 (CZ2), Suscepit_44 (CZ1), Tayonia_44 (CZ1), Trumpet_44 (CZ1), Yeet412_39 (CZ2), Zameen_44 (CZ1),

Start 8:
• Found in 26 of 51 (51.0%) of genes in pham
• Manual Annotations of this start: 1 of 47
• Called 3.8% of time when present
• Phage (with cluster) where this start called: Kita_45 (CZ1),

Start 10:
• Found in 8 of 51 (15.7%) of genes in pham
• Manual Annotations of this start: 2 of 47
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Azula_44 (CV), Gambino_46 (CV),

Start 12:
• Found in 44 of 51 (86.3%) of genes in pham
• Manual Annotations of this start: 3 of 47
• Called 6.8% of time when present
• Phage (with cluster) where this start called: EnalisNailo_38 (CY1), Frokostdame_44 (CV), Samman98_44 (CZ4),

Start 14:
• Found in 2 of 51 (3.9%) of genes in pham
• Manual Annotations of this start: 1 of 47
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Yeezy_39 (CZ3),

Start 15:
• Found in 51 of 51 (100.0%) of genes in pham
• Manual Annotations of this start: 20 of 47
• Called 43.1% of time when present
• Phage (with cluster) where this start called: AlumE_44 (CZ1), Apricot_52 (DN3), Bialota_42 (CZ1), Blueberry_43 (CV), BoyNamedSue_44 (CZ1), Bradissa_39 (CY1), Clark_43 (CZ4), Crater_52 (DN3), Fenry_40 (CV), Invectra_45 (CZ4), Jalammah_45 (CV), KappaFarmDelta_43 (CV), Kuwabara_49 (DN4), Lton_37 (CZ), Madavieve_40 (CZ1), MichaelScott_44 (CZ4), MissRona_44 (CV), Phistory_54 (DN1), PhorbesPhlower_36 (DH), Tuti_44 (CZ4), Wocket_42 (CV), Zirinka_41 (CZ1),

Start 20:
• Found in 1 of 51 (2.0%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Frickyeah_57 (DN1),

Summary by clusters:

There are 12 clusters represented in this pham: CY1, DH, DN4, CZ2, CZ3, CZ1, CZ4, CZ, DN1, DN3, CV, CY4,

Info for manual annotations of cluster CV:
•Start number 10 was manually annotated 2 times for cluster CV.
•Start number 12 was manually annotated 1 time for cluster CV.
•Start number 15 was manually annotated 6 times for cluster CV.

Info for manual annotations of cluster CY1:
•Start number 7 was manually annotated 1 time for cluster CY1.
•Start number 12 was manually annotated 1 time for cluster CY1.
•Start number 15 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CY4:
•Start number 7 was manually annotated 1 time for cluster CY4.

Info for manual annotations of cluster CZ:
•Start number 7 was manually annotated 1 time for cluster CZ.
•Start number 15 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:
•Start number 7 was manually annotated 9 times for cluster CZ1.
•Start number 8 was manually annotated 1 time for cluster CZ1.
•Start number 15 was manually annotated 4 times for cluster CZ1.

Info for manual annotations of cluster CZ2:
•Start number 7 was manually annotated 6 times for cluster CZ2.

Info for manual annotations of cluster CZ3:
•Start number 14 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:
•Start number 6 was manually annotated 2 times for cluster CZ4.
•Start number 12 was manually annotated 1 time for cluster CZ4.
•Start number 15 was manually annotated 3 times for cluster CZ4.

Info for manual annotations of cluster DH:
•Start number 15 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DN1:
•Start number 15 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN3:
•Start number 15 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:
•Start number 15 was manually annotated 1 time for cluster DN4.

Gene Information:
Gene: AlumE_44 Start: 34842, Stop: 33937, Start Num: 15
Candidate Starts for AlumE_44:
(Start: 7 @34896 has 18 MA's), (Start: 8 @34884 has 1 MA's), (Start: 12 @34872 has 3 MA's), (13, 34860), (Start: 15 @34842 has 20 MA's), (16, 34836), (19, 34800), (31, 34659), (34, 34623), (42, 34527), (44, 34509), (49, 34467), (51, 34401), (78, 34092),

Gene: Antonio_44 Start: 34169, Stop: 33210, Start Num: 7
Candidate Starts for Antonio_44:
(Start: 7 @34169 has 18 MA's), (Start: 8 @34157 has 1 MA's), (Start: 12 @34145 has 3 MA's), (13, 34133), (Start: 15 @34115 has 20 MA's), (16, 34109), (19, 34073), (31, 33932), (34, 33896), (42, 33800), (44, 33782), (49, 33740), (51, 33674), (78, 33365), (79, 33344), (83, 33314),

Gene: Apricot_52 Start: 34675, Stop: 33923, Start Num: 15
Candidate Starts for Apricot_52:
(Start: 15 @34675 has 20 MA's), (22, 34609), (24, 34561), (39, 34414), (47, 34354), (57, 34240), (78, 34066),

Gene: Attis_39 Start: 31302, Stop: 30343, Start Num: 7
Candidate Starts for Attis_39:
(Start: 7 @31302 has 18 MA's), (Start: 8 @31290 has 1 MA's), (Start: 12 @31278 has 3 MA's), (13, 31266), (Start: 15 @31248 has 20 MA's), (16, 31242), (19, 31206), (31, 31065), (34, 31029), (42, 30933), (44, 30915), (49, 30873), (51, 30807), (78, 30498), (79, 30477), (83, 30447),

Gene: Azula_44 Start: 34596, Stop: 33832, Start Num: 10
Candidate Starts for Azula_44:
(Start: 10 @34596 has 2 MA's), (Start: 12 @34590 has 3 MA's), (Start: 15 @34560 has 20 MA's), (19, 34524), (27, 34419), (29, 34404), (58, 34119), (69, 34038), (71, 33993), (72, 33960), (80, 33879), (82, 33864), (85, 33837),

Gene: Beenie_37 Start: 32686, Stop: 31826, Start Num: 6
Candidate Starts for Beenie_37:
(3, 32743), (5, 32710), (Start: 6 @32686 has 2 MA's), (Start: 12 @32659 has 3 MA's), (Start: 15 @32629 has 20 MA's), (19, 32584), (21, 32563), (22, 32557), (30, 32458), (31, 32452), (45, 32293), (46, 32284), (48, 32272), (56, 32176), (66, 32113), (74, 31975), (82, 31879),

Gene: Bialota_42 Start: 34867, Stop: 33962, Start Num: 15
Candidate Starts for Bialota_42:
(Start: 7 @34921 has 18 MA's), (Start: 8 @34909 has 1 MA's), (Start: 12 @34897 has 3 MA's), (13, 34885), (Start: 15 @34867 has 20 MA's), (16, 34861), (19, 34825), (31, 34684), (34, 34648), (42, 34552), (44, 34534), (49, 34492), (51, 34426), (78, 34117), (79, 34096), (83, 34066),

Gene: Blueberry_43 Start: 34560, Stop: 33832, Start Num: 15
Candidate Starts for Blueberry_43:
(Start: 10 @34596 has 2 MA's), (Start: 12 @34590 has 3 MA's), (Start: 15 @34560 has 20 MA's), (19, 34524), (27, 34419), (29, 34404), (58, 34119), (69, 34038), (71, 33993), (72, 33960), (80, 33879), (82, 33864), (85, 33837),

Gene: BoyNamedSue_44 Start: 34842, Stop: 33937, Start Num: 15
Candidate Starts for BoyNamedSue_44:
(Start: 7 @34896 has 18 MA's), (Start: 8 @34884 has 1 MA's), (Start: 12 @34872 has 3 MA's), (13, 34860), (Start: 15 @34842 has 20 MA's), (16, 34836), (19, 34800), (31, 34659), (34, 34623), (42, 34527), (44, 34509), (49, 34467), (51, 34401), (78, 34092),

Gene: Bradissa_39 Start: 34156, Stop: 33251, Start Num: 15
Candidate Starts for Bradissa_39:
(Start: 7 @34210 has 18 MA's), (Start: 8 @34198 has 1 MA's), (Start: 12 @34186 has 3 MA's), (13, 34174), (Start: 15 @34156 has 20 MA's), (16, 34150), (19, 34114), (31, 33973), (34, 33937), (44, 33823), (49, 33781), (51, 33715), (78, 33403), (79, 33382), (83, 33352),

Gene: Bunnybear_37 Start: 32567, Stop: 31611, Start Num: 7
Candidate Starts for Bunnybear_37:
(Start: 7 @32567 has 18 MA's), (Start: 8 @32555 has 1 MA's), (Start: 12 @32543 has 3 MA's), (13, 32531), (Start: 15 @32513 has 20 MA's), (16, 32507), (19, 32471), (21, 32450), (34, 32294), (78, 31766), (79, 31745), (84, 31703),

Gene: Clark_43 Start: 32446, Stop: 31643, Start Num: 15
Candidate Starts for Clark_43:
(3, 32560), (5, 32527), (Start: 6 @32503 has 2 MA's), (Start: 12 @32476 has 3 MA's), (Start: 15 @32446 has 20 MA's), (19, 32401), (21, 32380), (22, 32374), (30, 32275), (31, 32269), (45, 32110), (46, 32101), (48, 32089), (56, 31993), (66, 31930), (74, 31792), (82, 31696),

Gene: Crater_52 Start: 35070, Stop: 34318, Start Num: 15
Candidate Starts for Crater_52:
(Start: 15 @35070 has 20 MA's), (22, 35004), (24, 34956), (39, 34809), (47, 34749), (57, 34635), (78, 34461),

Gene: EdnaMode_38 Start: 29990, Stop: 29031, Start Num: 7
Candidate Starts for EdnaMode_38:
(Start: 7 @29990 has 18 MA's), (Start: 8 @29978 has 1 MA's), (Start: 12 @29966 has 3 MA's), (13, 29954), (Start: 15 @29936 has 20 MA's), (16, 29930), (19, 29894), (31, 29753), (34, 29717), (42, 29621), (44, 29603), (49, 29561), (51, 29495), (78, 29186), (79, 29165), (83, 29135),

Gene: EnalisNailo_38 Start: 33720, Stop: 32785, Start Num: 12
Candidate Starts for EnalisNailo_38:
(Start: 7 @33744 has 18 MA's), (Start: 8 @33732 has 1 MA's), (Start: 12 @33720 has 3 MA's), (13, 33708), (Start: 15 @33690 has 20 MA's), (16, 33684), (19, 33648), (31, 33507), (34, 33471), (44, 33357), (49, 33315), (51, 33249), (78, 32937), (79, 32916), (83, 32886),

Gene: Eudoria_44 Start: 34169, Stop: 33210, Start Num: 7
Candidate Starts for Eudoria_44:
(Start: 7 @34169 has 18 MA's), (Start: 8 @34157 has 1 MA's), (Start: 12 @34145 has 3 MA's), (13, 34133), (Start: 15 @34115 has 20 MA's), (16, 34109), (19, 34073), (31, 33932), (34, 33896), (42, 33800), (44, 33782), (49, 33740), (51, 33674), (78, 33365), (79, 33344), (83, 33314),

Gene: Fenry_40 Start: 33564, Stop: 32836, Start Num: 15
Candidate Starts for Fenry_40:
(Start: 10 @33600 has 2 MA's), (Start: 12 @33594 has 3 MA's), (Start: 15 @33564 has 20 MA's), (19, 33528), (22, 33504), (27, 33423), (29, 33408), (58, 33123), (69, 33042), (71, 32997), (72, 32964), (82, 32868), (85, 32841),

Gene: Frickyeah_57 Start: 35160, Stop: 34366, Start Num: 20
Candidate Starts for Frickyeah_57:
(1, 35382), (Start: 15 @35208 has 20 MA's), (20, 35160), (25, 35085), (33, 35019), (37, 34947), (59, 34722), (60, 34716), (62, 34695), (65, 34680), (73, 34548),

Gene: Frokostdame_44 Start: 34314, Stop: 33496, Start Num: 12
Candidate Starts for Frokostdame_44:
(3, 34398), (Start: 6 @34341 has 2 MA's), (Start: 7 @34338 has 18 MA's), (Start: 12 @34314 has 3 MA's), (Start: 15 @34284 has 20 MA's), (17, 34272), (19, 34251), (21, 34230), (23, 34209), (24, 34176), (26, 34155), (41, 33990), (49, 33933), (52, 33858), (61, 33780), (63, 33771), (67, 33744), (68, 33714), (70, 33672), (82, 33528), (85, 33501),

Gene: Gambino_46 Start: 34596, Stop: 33832, Start Num: 10
Candidate Starts for Gambino_46:
(Start: 10 @34596 has 2 MA's), (Start: 12 @34590 has 3 MA's), (Start: 15 @34560 has 20 MA's), (19, 34524), (27, 34419), (29, 34404), (58, 34119), (69, 34038), (71, 33993), (72, 33960), (80, 33879), (82, 33864), (85, 33837),

Gene: Hyzer_49 Start: 37168, Stop: 36215, Start Num: 7
Candidate Starts for Hyzer_49:
(Start: 7 @37168 has 18 MA's), (Start: 12 @37144 has 3 MA's), (13, 37132), (Start: 15 @37114 has 20 MA's), (16, 37108), (19, 37072), (31, 36931), (32, 36925), (34, 36895), (40, 36817), (44, 36781), (49, 36739), (54, 36652), (64, 36568), (75, 36415), (76, 36388), (78, 36370), (83, 36319),

Gene: Invectra_45 Start: 34020, Stop: 33217, Start Num: 15
Candidate Starts for Invectra_45:
(3, 34134), (5, 34101), (Start: 6 @34077 has 2 MA's), (Start: 12 @34050 has 3 MA's), (Start: 15 @34020 has 20 MA's), (19, 33975), (21, 33954), (22, 33948), (30, 33849), (31, 33843), (45, 33684), (46, 33675), (48, 33663), (56, 33567), (66, 33504), (74, 33366), (82, 33270),

Gene: Jalammah_45 Start: 34877, Stop: 34149, Start Num: 15
Candidate Starts for Jalammah_45:
(Start: 10 @34913 has 2 MA's), (Start: 12 @34907 has 3 MA's), (Start: 15 @34877 has 20 MA's), (19, 34841), (22, 34817), (27, 34736), (29, 34721), (58, 34436), (69, 34355), (71, 34310), (72, 34277), (82, 34181), (85, 34154),

Gene: KappaFarmDelta_43 Start: 32505, Stop: 31777, Start Num: 15
Candidate Starts for KappaFarmDelta_43:
(Start: 10 @32541 has 2 MA's), (Start: 12 @32535 has 3 MA's), (Start: 15 @32505 has 20 MA's), (19, 32469), (22, 32445), (27, 32364), (29, 32349), (58, 32064), (69, 31983), (71, 31938), (72, 31905), (82, 31809), (85, 31782),

Gene: Kita_45 Start: 34166, Stop: 33219, Start Num: 8
Candidate Starts for Kita_45:
(Start: 7 @34178 has 18 MA's), (Start: 8 @34166 has 1 MA's), (Start: 12 @34154 has 3 MA's), (13, 34142), (Start: 15 @34124 has 20 MA's), (16, 34118), (19, 34082), (31, 33941), (34, 33905), (42, 33809), (44, 33791), (49, 33749), (51, 33683), (78, 33374), (79, 33353), (83, 33323),

Gene: Kuwabara_49 Start: 35751, Stop: 34855, Start Num: 15
Candidate Starts for Kuwabara_49:
(2, 35874), (Start: 15 @35751 has 20 MA's), (22, 35688), (25, 35628), (29, 35592), (38, 35490), (49, 35385), (50, 35370), (53, 35304), (55, 35280), (63, 35220), (80, 34983), (85, 34941), (86, 34887), (87, 34860),

Gene: Lilas_41 Start: 35455, Stop: 34496, Start Num: 7
Candidate Starts for Lilas_41:
(Start: 7 @35455 has 18 MA's), (Start: 8 @35443 has 1 MA's), (Start: 12 @35431 has 3 MA's), (13, 35419), (Start: 15 @35401 has 20 MA's), (16, 35395), (19, 35359), (31, 35218), (34, 35182), (44, 35068), (49, 35026), (51, 34960), (78, 34648), (79, 34627), (83, 34597),

Gene: LordFarquaad_41 Start: 31283, Stop: 30324, Start Num: 7
Candidate Starts for LordFarquaad_41:
(Start: 7 @31283 has 18 MA's), (Start: 8 @31271 has 1 MA's), (Start: 12 @31259 has 3 MA's), (13, 31247), (Start: 15 @31229 has 20 MA's), (16, 31223), (19, 31187), (31, 31046), (34, 31010), (42, 30914), (44, 30896), (49, 30854), (51, 30788), (78, 30479), (79, 30458), (83, 30428),

Gene: Lton_37 Start: 27834, Stop: 26986, Start Num: 15
Candidate Starts for Lton_37:
(4, 27918), (9, 27870), (11, 27867), (Start: 14 @27840 has 1 MA's), (Start: 15 @27834 has 20 MA's), (22, 27771), (34, 27627), (35, 27603), (49, 27507), (50, 27492), (53, 27426), (55, 27402), (63, 27342), (77, 27138), (81, 27099),

Gene: Madavieve_40 Start: 33924, Stop: 33025, Start Num: 15
Candidate Starts for Madavieve_40:
(Start: 7 @33978 has 18 MA's), (Start: 8 @33966 has 1 MA's), (Start: 12 @33954 has 3 MA's), (13, 33942), (Start: 15 @33924 has 20 MA's), (16, 33918), (19, 33882), (21, 33861), (34, 33705), (78, 33180), (79, 33159),

Gene: Maridalia_45 Start: 34313, Stop: 33357, Start Num: 7
Candidate Starts for Maridalia_45:
(Start: 7 @34313 has 18 MA's), (Start: 8 @34301 has 1 MA's), (Start: 12 @34289 has 3 MA's), (13, 34277), (Start: 15 @34259 has 20 MA's), (16, 34253), (19, 34217), (21, 34196), (34, 34040), (78, 33512), (79, 33491), (84, 33449),

Gene: MichaelScott_44 Start: 33922, Stop: 33119, Start Num: 15
Candidate Starts for MichaelScott_44:
(3, 34036), (5, 34003), (Start: 6 @33979 has 2 MA's), (Start: 12 @33952 has 3 MA's), (Start: 15 @33922 has 20 MA's), (19, 33877), (21, 33856), (22, 33850), (30, 33751), (31, 33745), (45, 33586),

(46, 33577), (48, 33565), (56, 33469), (66, 33406), (74, 33268), (82, 33172),

Gene: MissRona_44 Start: 34561, Stop: 33833, Start Num: 15
Candidate Starts for MissRona_44:
(Start: 10 @34597 has 2 MA's), (Start: 12 @34591 has 3 MA's), (Start: 15 @34561 has 20 MA's), (19, 34525), (27, 34420), (29, 34405), (58, 34120), (69, 34039), (71, 33994), (72, 33961), (80, 33880), (82, 33865), (85, 33838),

Gene: Neobush_44 Start: 34163, Stop: 33204, Start Num: 7
Candidate Starts for Neobush_44:
(Start: 7 @34163 has 18 MA's), (Start: 8 @34151 has 1 MA's), (Start: 12 @34139 has 3 MA's), (13, 34127), (Start: 15 @34109 has 20 MA's), (16, 34103), (19, 34067), (31, 33926), (34, 33890), (42, 33794), (44, 33776), (49, 33734), (51, 33668), (78, 33359), (79, 33338), (83, 33308),

Gene: Phistory_54 Start: 35622, Stop: 34870, Start Num: 15
Candidate Starts for Phistory_54:
(Start: 15 @35622 has 20 MA's), (22, 35556), (24, 35508), (39, 35361), (47, 35301), (57, 35187), (78, 35013),

Gene: PhorbesPhlower_36 Start: 28118, Stop: 27366, Start Num: 15
Candidate Starts for PhorbesPhlower_36:
(Start: 15 @28118 has 20 MA's), (22, 28052), (24, 28004), (39, 27857), (47, 27797), (57, 27683), (78, 27509),

Gene: Pickett_37 Start: 28466, Stop: 27507, Start Num: 7
Candidate Starts for Pickett_37:
(Start: 7 @28466 has 18 MA's), (Start: 8 @28454 has 1 MA's), (Start: 12 @28442 has 3 MA's), (13, 28430), (Start: 15 @28412 has 20 MA's), (16, 28406), (19, 28370), (31, 28229), (34, 28193), (42, 28097), (44, 28079), (49, 28037), (51, 27971), (78, 27662), (79, 27641), (83, 27611),

Gene: Polly_41 Start: 33612, Stop: 32653, Start Num: 7
Candidate Starts for Polly_41:
(Start: 7 @33612 has 18 MA's), (Start: 8 @33600 has 1 MA's), (Start: 12 @33588 has 3 MA's), (13, 33576), (Start: 15 @33558 has 20 MA's), (16, 33552), (19, 33516), (31, 33375), (34, 33339), (42, 33243), (44, 33225), (49, 33183), (51, 33117), (78, 32808), (79, 32787), (83, 32757),

Gene: Posh_46 Start: 35855, Stop: 34893, Start Num: 7
Candidate Starts for Posh_46:
(Start: 7 @35855 has 18 MA's), (Start: 8 @35843 has 1 MA's), (Start: 12 @35831 has 3 MA's), (13, 35819), (Start: 15 @35801 has 20 MA's), (16, 35795), (19, 35759), (31, 35618), (32, 35612), (34, 35582), (36, 35552), (44, 35468), (49, 35426), (51, 35360), (78, 35048), (79, 35027), (83, 34997),

Gene: Samman98_44 Start: 32579, Stop: 31746, Start Num: 12
Candidate Starts for Samman98_44:
(3, 32663), (5, 32630), (Start: 6 @32606 has 2 MA's), (Start: 12 @32579 has 3 MA's), (Start: 15 @32549 has 20 MA's), (19, 32504), (21, 32483), (22, 32477), (30, 32378), (31, 32372), (45, 32213), (46, 32204), (48, 32192), (56, 32096), (66, 32033), (74, 31895), (82, 31799),

Gene: Sekhmet_44 Start: 33506, Stop: 32646, Start Num: 6
Candidate Starts for Sekhmet_44:
(3, 33563), (5, 33530), (Start: 6 @33506 has 2 MA's), (Start: 12 @33479 has 3 MA's), (Start: 15 @33449 has 20 MA's), (19, 33404), (21, 33383), (22, 33377), (30, 33278), (31, 33272), (45, 33113), (46, 33104), (48, 33092), (56, 32996), (66, 32933), (74, 32795), (82, 32699),

Gene: SoilAssassin_39 Start: 31301, Stop: 30342, Start Num: 7
Candidate Starts for SoilAssassin_39:
(Start: 7 @31301 has 18 MA's), (Start: 8 @31289 has 1 MA's), (Start: 12 @31277 has 3 MA's), (13, 31265), (Start: 15 @31247 has 20 MA's), (16, 31241), (19, 31205), (31, 31064), (34, 31028), (42, 30932), (44, 30914), (49, 30872), (51, 30806), (78, 30497), (79, 30476), (83, 30446),

Gene: Suscepit_44 Start: 34170, Stop: 33211, Start Num: 7
Candidate Starts for Suscepit_44:
(Start: 7 @34170 has 18 MA's), (Start: 8 @34158 has 1 MA's), (Start: 12 @34146 has 3 MA's), (13, 34134), (Start: 15 @34116 has 20 MA's), (16, 34110), (19, 34074), (31, 33933), (34, 33897), (42, 33801), (44, 33783), (49, 33741), (51, 33675), (78, 33366), (79, 33345), (83, 33315),

Gene: Tayonia_44 Start: 34169, Stop: 33210, Start Num: 7
Candidate Starts for Tayonia_44:
(Start: 7 @34169 has 18 MA's), (Start: 8 @34157 has 1 MA's), (Start: 12 @34145 has 3 MA's), (13, 34133), (Start: 15 @34115 has 20 MA's), (16, 34109), (19, 34073), (31, 33932), (34, 33896), (42, 33800), (44, 33782), (49, 33740), (51, 33674), (78, 33365), (79, 33344), (83, 33314),

Gene: Trumpet_44 Start: 34170, Stop: 33211, Start Num: 7
Candidate Starts for Trumpet_44:
(Start: 7 @34170 has 18 MA's), (Start: 8 @34158 has 1 MA's), (Start: 12 @34146 has 3 MA's), (13, 34134), (Start: 15 @34116 has 20 MA's), (16, 34110), (19, 34074), (31, 33933), (34, 33897), (42, 33801), (44, 33783), (49, 33741), (51, 33675), (78, 33366), (79, 33345), (83, 33315),

Gene: Tuti_44 Start: 33264, Stop: 32482, Start Num: 15
Candidate Starts for Tuti_44:
(3, 33378), (5, 33345), (Start: 6 @33321 has 2 MA's), (Start: 12 @33294 has 3 MA's), (Start: 15 @33264 has 20 MA's), (19, 33219), (21, 33198), (22, 33192), (30, 33093), (31, 33087), (45, 32928), (46, 32919), (48, 32907), (56, 32811), (66, 32748), (74, 32610), (80, 32529), (82, 32514),

Gene: Wocket_42 Start: 32670, Stop: 31942, Start Num: 15
Candidate Starts for Wocket_42:
(Start: 10 @32706 has 2 MA's), (Start: 12 @32700 has 3 MA's), (Start: 15 @32670 has 20 MA's), (19, 32634), (22, 32610), (27, 32529), (29, 32514), (58, 32229), (69, 32148), (71, 32103), (72, 32070), (82, 31974), (85, 31947),

Gene: Yeet412_39 Start: 31302, Stop: 30343, Start Num: 7
Candidate Starts for Yeet412_39:
(Start: 7 @31302 has 18 MA's), (Start: 8 @31290 has 1 MA's), (Start: 12 @31278 has 3 MA's), (13, 31266), (Start: 15 @31248 has 20 MA's), (16, 31242), (19, 31206), (31, 31065), (34, 31029), (42, 30933), (44, 30915), (49, 30873), (51, 30807), (78, 30498), (79, 30477), (83, 30447),

Gene: Yeezy_39 Start: 31783, Stop: 30884, Start Num: 14
Candidate Starts for Yeezy_39:
(Start: 6 @31834 has 2 MA's), (Start: 7 @31831 has 18 MA's), (Start: 12 @31807 has 3 MA's), (Start: 14 @31783 has 1 MA's), (Start: 15 @31777 has 20 MA's), (18, 31753), (28, 31627), (32, 31594), (40, 31489), (43, 31456), (78, 31039), (79, 31018),

Gene: Zameen_44 Start: 34169, Stop: 33210, Start Num: 7
Candidate Starts for Zameen_44:
(Start: 7 @34169 has 18 MA's), (Start: 8 @34157 has 1 MA's), (Start: 12 @34145 has 3 MA's), (13, 34133), (Start: 15 @34115 has 20 MA's), (16, 34109), (19, 34073), (31, 33932), (34, 33896), (42,

33800), (44, 33782), (49, 33740), (51, 33674), (78, 33365), (79, 33344), (83, 33314),

Gene: Zirinka_41 Start: 34855, Stop: 33950, Start Num: 15
Candidate Starts for Zirinka_41:
(Start: 7 @34909 has 18 MA's), (Start: 8 @34897 has 1 MA's), (Start: 12 @34885 has 3 MA's), (13, 34873), (Start: 15 @34855 has 20 MA's), (16, 34849), (19, 34813), (31, 34672), (34, 34636), (42, 34540), (44, 34522), (49, 34480), (51, 34414), (78, 34105), (79, 34084), (83, 34054),