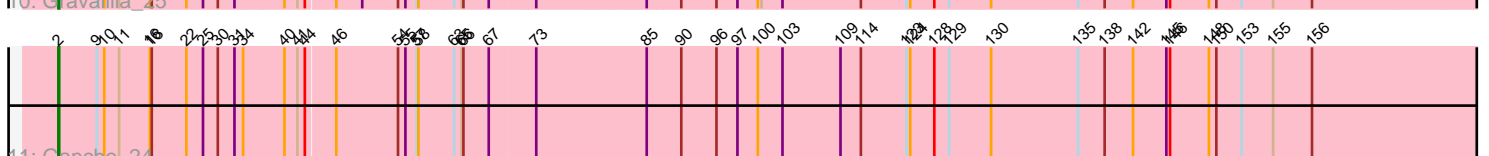
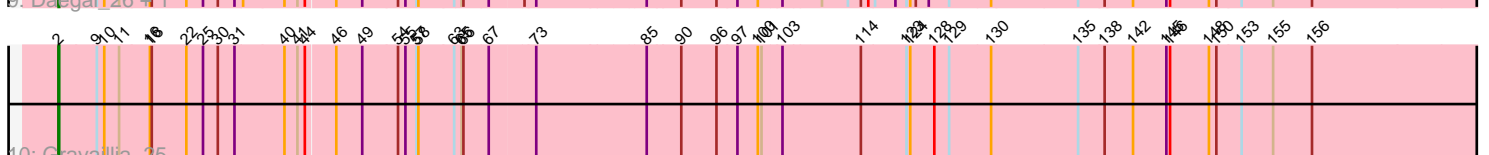
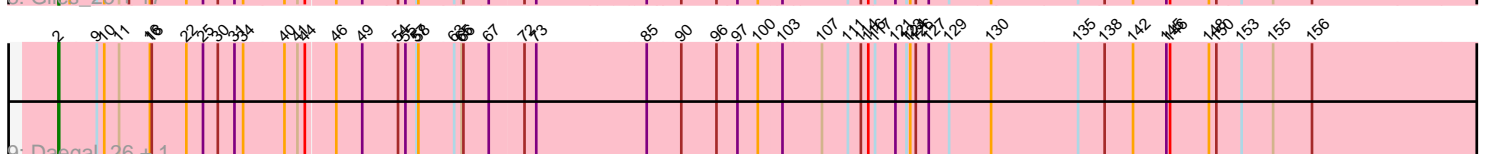
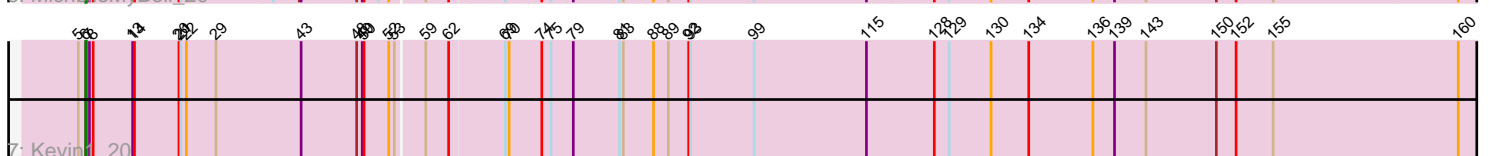
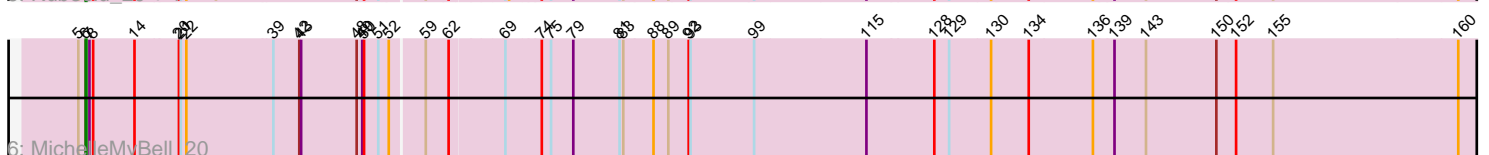
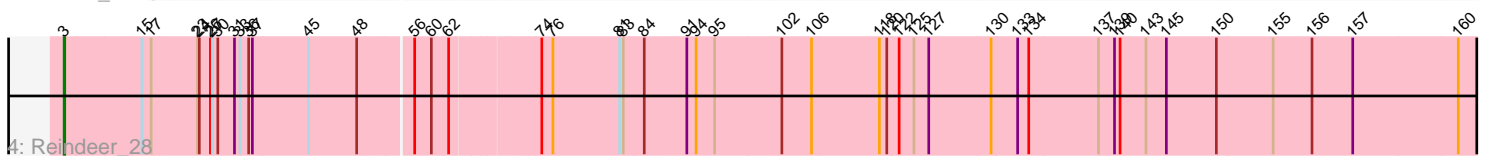
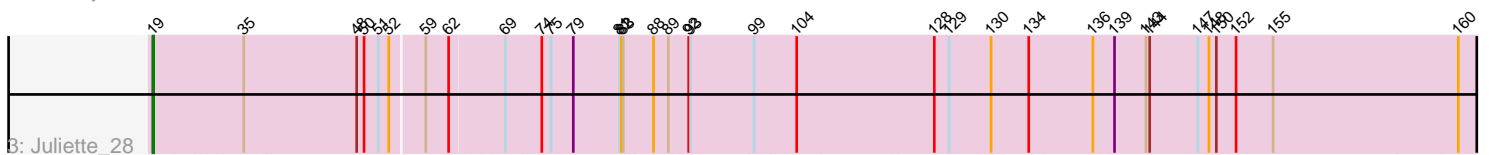
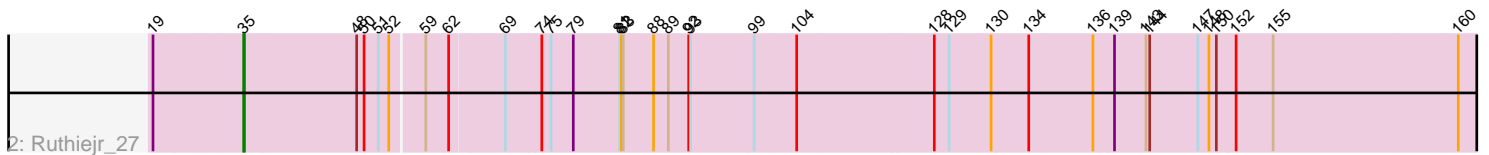
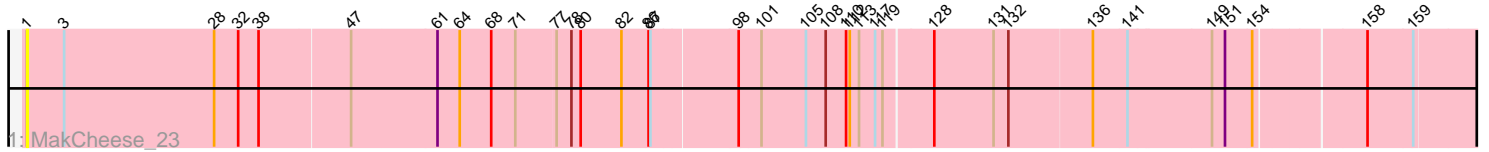


Pham 216432



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 216432 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216432 has 30 members, 1 are drafts.

Phages represented in each track:

- Track 1 : MakCheese_23
- Track 2 : Ruthiejr_27
- Track 3 : Juliette_28
- Track 4 : Reindeer_28
- Track 5 : Rubeelu_20, Butters_20
- Track 6 : MichelleMyBell_20
- Track 7 : Kevin1_20
- Track 8 : Giles_25, HH92_25, Forge_25, OBUpride_25, Dewey_25, Wishmaker_25, LilHazelnut_25, Ubuntu_25, Luna22_25, Hail_25, Kinbote_25, Evanesce_25, Hadrien_25, Webster2_25, DeepSoil15_25, Luke_25, Amymech_25, Ein37_25
- Track 9 : Daegal_26, Amochick_25
- Track 10 : Gravaillia_25
- Track 11 : Gancho_24

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

The start number called the most often in the published annotations is 2, it was called in 22 of the 29 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amochick_25, Amymech_25, Daegal_26, DeepSoil15_25, Dewey_25, Ein37_25, Evanesce_25, Forge_25, Gancho_24, Giles_25, Gravaillia_25, HH92_25, Hadrien_25, Hail_25, Kinbote_25, LilHazelnut_25, Luke_25, Luna22_25, OBUpride_25, Ubuntu_25, Webster2_25, Wishmaker_25,

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

-

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

- Butters_20, Juliette_28, Kevin1_20, MakCheese_23, MichelleMyBell_20, Reindeer_28, Rubeelu_20, Ruthiejr_27,

Summary by start number:

Start 1:

- Found in 1 of 30 (3.3%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MakCheese_23 (DW),

Start 2:

- Found in 22 of 30 (73.3%) of genes in pham
- Manual Annotations of this start: 22 of 29
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amochick_25 (Q), Amymech_25 (Q), Daegal_26 (Q), DeepSoil15_25 (Q), Dewey_25 (Q), Ein37_25 (Q), Evanesce_25 (Q), Forge_25 (Q), Gancho_24 (Q), Giles_25 (Q), Gravaillia_25 (Q), HH92_25 (Q), Hadrien_25 (Q), Hail_25 (Q), Kinbote_25 (Q), LilHazelnut_25 (Q), Luke_25 (Q), Luna22_25 (Q), OBUpride_25 (Q), Ubuntu_25 (Q), Webster2_25 (Q), Wishmaker_25 (Q),

Start 3:

- Found in 2 of 30 (6.7%) of genes in pham
- Manual Annotations of this start: 1 of 29
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Reindeer_28 (M1),

Start 6:

- Found in 4 of 30 (13.3%) of genes in pham
- Manual Annotations of this start: 4 of 29
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Butters_20 (N), Kevin1_20 (N), MichelleMyBell_20 (N), Rubeelu_20 (N),

Start 19:

- Found in 2 of 30 (6.7%) of genes in pham
- Manual Annotations of this start: 1 of 29
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Juliette_28 (K4),

Start 35:

- Found in 2 of 30 (6.7%) of genes in pham
- Manual Annotations of this start: 1 of 29
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Ruthiejr_27 (K4),

Summary by clusters:

There are 5 clusters represented in this pham: Q, DW, K4, M1, N,

Info for manual annotations of cluster K4:

- Start number 19 was manually annotated 1 time for cluster K4.
- Start number 35 was manually annotated 1 time for cluster K4.

Info for manual annotations of cluster M1:

- Start number 3 was manually annotated 1 time for cluster M1.

Info for manual annotations of cluster N:

- Start number 6 was manually annotated 4 times for cluster N.

Info for manual annotations of cluster Q:

- Start number 2 was manually annotated 22 times for cluster Q.

Gene Information:

Gene: Amochick_25 Start: 20859, Stop: 23123, Start Num: 2

Candidate Starts for Amochick_25:

(Start: 2 @20859 has 22 MA's), (9, 20919), (10, 20931), (11, 20955), (16, 21003), (18, 21006), (22, 21060), (25, 21087), (30, 21111), (31, 21138), (34, 21150), (40, 21216), (41, 21237), (44, 21246), (46, 21291), (49, 21333), (54, 21390), (55, 21402), (57, 21420), (58, 21423), (63, 21480), (65, 21489), (66, 21492), (67, 21531), (72, 21582), (73, 21600), (85, 21765), (90, 21819), (96, 21876), (97, 21909), (100, 21942), (103, 21978), (107, 22038), (111, 22080), (114, 22101), (116, 22113), (117, 22122), (121, 22155), (123, 22173), (124, 22179), (126, 22188), (127, 22209), (129, 22242), (130, 22308), (135, 22446), (138, 22488), (142, 22533), (145, 22587), (146, 22593), (148, 22656), (150, 22668), (153, 22707), (155, 22758), (156, 22821),

Gene: Amymech_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Amymech_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Butters_20 Start: 17523, Stop: 19739, Start Num: 6

Candidate Starts for Butters_20:

(5, 17511), (Start: 6 @17523 has 4 MA's), (8, 17535), (14, 17601), (20, 17670), (21, 17673), (22, 17682), (29, 17730), (48, 17955), (50, 17967), (51, 17988), (59, 18051), (62, 18087), (69, 18165), (70, 18168), (74, 18216), (75, 18231), (79, 18267), (81, 18342), (83, 18348), (88, 18393), (89, 18417), (92, 18444), (93, 18447), (99, 18549), (115, 18726), (128, 18834), (129, 18858), (130, 18924), (134, 18984), (136, 19086), (139, 19119), (143, 19170), (150, 19284), (152, 19314), (155, 19374), (160, 19671),

Gene: Daegal_26 Start: 21147, Stop: 23411, Start Num: 2

Candidate Starts for Daegal_26:

(Start: 2 @21147 has 22 MA's), (9, 21207), (10, 21219), (11, 21243), (16, 21291), (18, 21294), (22, 21348), (25, 21375), (30, 21399), (31, 21426), (34, 21438), (40, 21504), (41, 21525), (44, 21534), (46, 21579), (49, 21621), (54, 21678), (55, 21690), (57, 21708), (58, 21711), (63, 21768), (65, 21777), (66, 21780), (67, 21819), (72, 21870), (73, 21888), (85, 22053), (90, 22107), (96, 22164), (97, 22197), (100, 22230), (103, 22266), (107, 22326), (111, 22368), (114, 22389), (116, 22401), (117, 22410), (121, 22443), (123, 22461), (124, 22467), (126, 22476), (127, 22497), (129, 22530), (130, 22596), (135, 22734), (138, 22776), (142, 22821), (145, 22875), (146, 22881), (148, 22944), (150, 22956), (153, 22995), (155, 23046), (156, 23109),

Gene: DeepSoil15_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for DeepSoil15_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Dewey_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Dewey_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Ein37_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Ein37_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Evanesce_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Evanesce_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Forge_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Forge_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Gancho_24 Start: 20577, Stop: 22841, Start Num: 2

Candidate Starts for Gancho_24:

(Start: 2 @20577 has 22 MA's), (9, 20637), (10, 20649), (11, 20673), (16, 20721), (18, 20724), (22, 20778), (25, 20805), (30, 20829), (31, 20856), (34, 20868), (40, 20934), (41, 20955), (44, 20964), (46, 21009), (54, 21108), (55, 21120), (57, 21138), (58, 21141), (63, 21198), (65, 21207), (66, 21210), (67, 21249), (73, 21318), (85, 21483), (90, 21537), (96, 21594), (97, 21627), (100, 21660), (103, 21696), (109, 21786), (114, 21819), (123, 21891), (124, 21897), (128, 21936), (129, 21960), (130, 22026), (135, 22164), (138, 22206), (142, 22251), (145, 22305), (146, 22311), (148, 22374), (150, 22386), (153, 22425), (155, 22476), (156, 22539),

Gene: Giles_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Giles_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Gravaillia_25 Start: 20583, Stop: 22847, Start Num: 2

Candidate Starts for Gravaillia_25:

(Start: 2 @20583 has 22 MA's), (9, 20643), (10, 20655), (11, 20679), (16, 20727), (18, 20730), (22, 20784), (25, 20811), (30, 20835), (31, 20862), (40, 20940), (41, 20961), (44, 20970), (46, 21015), (49, 21057), (54, 21114), (55, 21126), (57, 21144), (58, 21147), (63, 21204), (65, 21213), (66, 21216), (67, 21255), (73, 21324), (85, 21489), (90, 21543), (96, 21600), (97, 21633), (100, 21666), (101, 21672), (103, 21702), (114, 21825), (123, 21897), (124, 21903), (128, 21942), (129, 21966), (130, 22032), (135, 22170), (138, 22212), (142, 22257), (145, 22311), (146, 22317), (148, 22380), (150, 22392), (153, 22431), (155, 22482), (156, 22545),

Gene: HH92_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for HH92_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Hadrien_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Hadrien_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150,

22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Hail_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Hail_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Juliette_28 Start: 22173, Stop: 24272, Start Num: 19

Candidate Starts for Juliette_28:

(Start: 19 @22173 has 1 MA's), (Start: 35 @22308 has 1 MA's), (48, 22488), (50, 22500), (51, 22521), (52, 22533), (59, 22584), (62, 22620), (69, 22698), (74, 22749), (75, 22764), (79, 22800), (81, 22875), (82, 22878), (83, 22881), (88, 22926), (89, 22950), (92, 22977), (93, 22980), (99, 23082), (104, 23148), (128, 23367), (129, 23391), (130, 23457), (134, 23517), (136, 23619), (139, 23652), (143, 23703), (144, 23709), (147, 23787), (148, 23805), (150, 23817), (152, 23847), (155, 23907), (160, 24204),

Gene: Kevin1_20 Start: 17524, Stop: 19740, Start Num: 6

Candidate Starts for Kevin1_20:

(5, 17512), (Start: 6 @17524 has 4 MA's), (7, 17530), (8, 17536), (13, 17599), (14, 17602), (20, 17671), (21, 17674), (22, 17683), (29, 17731), (43, 17866), (48, 17956), (49, 17965), (50, 17968), (52, 18001), (53, 18010), (59, 18052), (62, 18088), (69, 18166), (70, 18169), (74, 18217), (75, 18232), (79, 18268), (81, 18343), (83, 18349), (88, 18394), (89, 18418), (92, 18445), (93, 18448), (99, 18550), (115, 18727), (128, 18835), (129, 18859), (130, 18925), (134, 18985), (136, 19087), (139, 19120), (143, 19171), (150, 19285), (152, 19315), (155, 19375), (160, 19672),

Gene: Kinbote_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Kinbote_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: LilHazelnut_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for LilHazelnut_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Luke_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Luke_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Luna22_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Luna22_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: MakCheese_23 Start: 19321, Stop: 21606, Start Num: 1

Candidate Starts for MakCheese_23:

(1, 19321), (Start: 3 @19381 has 1 MA's), (28, 19624), (32, 19663), (38, 19696), (47, 19837), (61, 19972), (64, 20008), (68, 20059), (71, 20098), (77, 20161), (78, 20185), (80, 20200), (82, 20266), (86, 20308), (87, 20311), (98, 20443), (101, 20476), (105, 20548), (108, 20578), (110, 20611), (112, 20617), (113, 20629), (117, 20653), (119, 20665), (128, 20740), (131, 20833), (132, 20857), (136, 20989), (141, 21043), (149, 21175), (151, 21196), (154, 21238), (158, 21400), (159, 21472),

Gene: MichelleMyBell_20 Start: 17554, Stop: 19770, Start Num: 6

Candidate Starts for MichelleMyBell_20:

(5, 17542), (Start: 6 @17554 has 4 MA's), (7, 17560), (8, 17566), (14, 17632), (20, 17701), (21, 17704), (22, 17713), (39, 17851), (42, 17893), (43, 17896), (48, 17986), (49, 17995), (50, 17998), (51, 18019), (52, 18031), (59, 18082), (62, 18118), (69, 18196), (74, 18247), (75, 18262), (79, 18298), (81, 18373), (83, 18379), (88, 18424), (89, 18448), (92, 18475), (93, 18478), (99, 18580), (115, 18757), (128, 18865), (129, 18889), (130, 18955), (134, 19015), (136, 19117), (139, 19150), (143, 19201), (150, 19315), (152, 19345), (155, 19405), (160, 19702),

Gene: OBUpride_25 Start: 20847, Stop: 23111, Start Num: 2

Candidate Starts for OBUpride_25:

(Start: 2 @20847 has 22 MA's), (4, 20865), (9, 20907), (10, 20919), (11, 20943), (12, 20958), (16, 20991), (18, 20994), (22, 21048), (25, 21075), (30, 21099), (31, 21126), (34, 21138), (40, 21204), (41, 21225), (44, 21234), (46, 21279), (49, 21321), (54, 21378), (55, 21390), (57, 21408), (58, 21411), (63, 21468), (65, 21477), (66, 21480), (67, 21519), (72, 21570), (73, 21588), (85, 21753), (90, 21807), (96, 21864), (97, 21897), (100, 21930), (103, 21966), (111, 22068), (114, 22089), (116, 22101), (117, 22110), (121, 22143), (123, 22161), (124, 22167), (126, 22176), (127, 22197), (129, 22230), (130, 22296), (135, 22434), (138, 22476), (142, 22521), (145, 22575), (146, 22581), (148, 22644), (150, 22656), (153, 22695), (155, 22746), (156, 22809),

Gene: Reindeer_28 Start: 24446, Stop: 26686, Start Num: 3

Candidate Starts for Reindeer_28:

(Start: 3 @24446 has 1 MA's), (15, 24566), (17, 24581), (23, 24653), (24, 24656), (26, 24674), (27, 24677), (30, 24686), (31, 24713), (33, 24722), (36, 24734), (37, 24740), (45, 24830), (48, 24908), (56,

24986), (60, 25013), (62, 25040), (74, 25163), (76, 25181), (81, 25289), (83, 25295), (84, 25325), (91, 25388), (94, 25403), (95, 25433), (102, 25538), (106, 25586), (118, 25694), (120, 25706), (122, 25724), (125, 25748), (127, 25772), (130, 25871), (133, 25913), (134, 25931), (137, 26042), (139, 26066), (140, 26075), (143, 26117), (145, 26150), (150, 26231), (155, 26321), (156, 26384), (157, 26450), (160, 26618),

Gene: Rubeelu_20 Start: 17523, Stop: 19739, Start Num: 6

Candidate Starts for Rubeelu_20:

(5, 17511), (Start: 6 @17523 has 4 MA's), (8, 17535), (14, 17601), (20, 17670), (21, 17673), (22, 17682), (29, 17730), (48, 17955), (50, 17967), (51, 17988), (59, 18051), (62, 18087), (69, 18165), (70, 18168), (74, 18216), (75, 18231), (79, 18267), (81, 18342), (83, 18348), (88, 18393), (89, 18417), (92, 18444), (93, 18447), (99, 18549), (115, 18726), (128, 18834), (129, 18858), (130, 18924), (134, 18984), (136, 19086), (139, 19119), (143, 19170), (150, 19284), (152, 19314), (155, 19374), (160, 19671),

Gene: Ruthiejr_27 Start: 22039, Stop: 24003, Start Num: 35

Candidate Starts for Ruthiejr_27:

(Start: 19 @21904 has 1 MA's), (Start: 35 @22039 has 1 MA's), (48, 22219), (50, 22231), (51, 22252), (52, 22264), (59, 22315), (62, 22351), (69, 22429), (74, 22480), (75, 22495), (79, 22531), (81, 22606), (82, 22609), (83, 22612), (88, 22657), (89, 22681), (92, 22708), (93, 22711), (99, 22813), (104, 22879), (128, 23098), (129, 23122), (130, 23188), (134, 23248), (136, 23350), (139, 23383), (143, 23434), (144, 23440), (147, 23518), (148, 23536), (150, 23548), (152, 23578), (155, 23638), (160, 23935),

Gene: Ubuntu_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Ubuntu_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Webster2_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Webster2_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130, 22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),

Gene: Wishmaker_25 Start: 20853, Stop: 23117, Start Num: 2

Candidate Starts for Wishmaker_25:

(Start: 2 @20853 has 22 MA's), (4, 20871), (9, 20913), (10, 20925), (11, 20949), (12, 20964), (16, 20997), (18, 21000), (22, 21054), (25, 21081), (30, 21105), (31, 21132), (34, 21144), (40, 21210), (41, 21231), (44, 21240), (46, 21285), (49, 21327), (54, 21384), (55, 21396), (57, 21414), (58, 21417), (63, 21474), (65, 21483), (66, 21486), (67, 21525), (72, 21576), (73, 21594), (85, 21759), (90, 21813), (96, 21870), (97, 21903), (100, 21936), (103, 21972), (111, 22074), (114, 22095), (116, 22107), (117, 22116), (121, 22149), (123, 22167), (124, 22173), (126, 22182), (127, 22203), (129, 22236), (130,

22302), (135, 22440), (138, 22482), (142, 22527), (145, 22581), (146, 22587), (148, 22650), (150, 22662), (153, 22701), (155, 22752), (156, 22815),