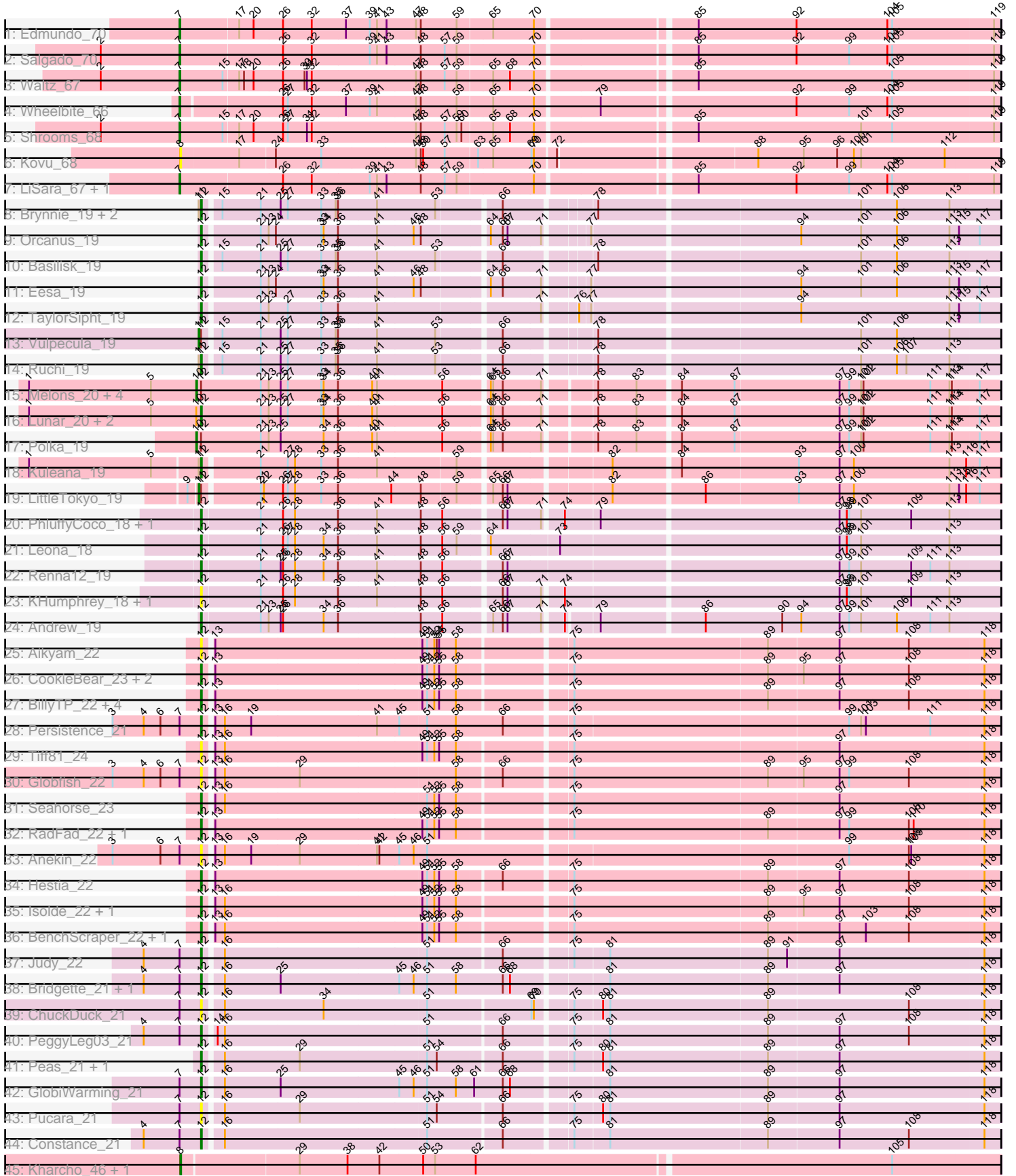


Pham 168217



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 168217 Report

This analysis was run 07/09/24 on database version 566.

Pham number 168217 has 68 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Edmundo_70
- Track 2 : Salgado_70
- Track 3 : Waltz_67
- Track 4 : Wheelbite_66
- Track 5 : Shrooms_68
- Track 6 : Kovu_68
- Track 7 : LiSara_67, Laroye_70
- Track 8 : Brynnie_19, Jamun_19, Chickaboom_18
- Track 9 : Orcanus_19
- Track 10 : Basilisk_19
- Track 11 : Eesa_19
- Track 12 : TaylorSipht_19
- Track 13 : Vulpecula_19
- Track 14 : Ruchi_19
- Track 15 : Melons_20, Kepler_19, Daob_20, Coral_19, Cote_20
- Track 16 : Lunar_20, Amelia_20, HannahPhantana_20
- Track 17 : Polka_19
- Track 18 : Kuleana_19
- Track 19 : LittleTokyo_19
- Track 20 : PhluffyCoco_18, RedFox_18
- Track 21 : Leona_18
- Track 22 : Renna12_19
- Track 23 : KHumphrey_18, Juno112_18
- Track 24 : Andrew_19
- Track 25 : Aikyam_22
- Track 26 : CookieBear_23, MidnightRain_22, YoungHarleezy_22
- Track 27 : BillyTP_22, Auxilium_22, Gorpy_22, Raphaella_22, Sakai_22
- Track 28 : Persistence_21
- Track 29 : Tiff81_24
- Track 30 : Globfish_22
- Track 31 : Seahorse_23
- Track 32 : RadFad_22, Hillester_22
- Track 33 : Anekin_22
- Track 34 : Hestia_22
- Track 35 : Isolde_22, Phrank15_22
- Track 36 : BenchScraper_22, Richie_22
- Track 37 : Judy_22

- Track 38 : Bridgette_21, Karkharias_21
- Track 39 : ChuckDuck_21
- Track 40 : PeggyLeg03_21
- Track 41 : Peas_21, Eileen_21
- Track 42 : GlobiWarming_21
- Track 43 : Pucara_21
- Track 44 : Constance_21
- Track 45 : Kharcho_46, Ottawa_46

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

The start number called the most often in the published annotations is 12, it was called in 32 of the 49 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aikyam_22, Amelia_20, Andrew_19, Anekin_22, Auxilium_22, Basilisk_19, BenchScraper_22, BillyTP_22, Bridgette_21, Brynnie_19, Chickaboom_18, ChuckDuck_21, Constance_21, CookieBear_23, Eesa_19, Eileen_21, Globfish_22, GlobiWarming_21, Gorpy_22, HannahPhantana_20, Hestia_22, Hillester_22, Isolde_22, Jamun_19, Judy_22, Juno112_18, KHumphrey_18, Karkharias_21, Kuleana_19, Leona_18, Lunar_20, MidnightRain_22, Orcanus_19, Peas_21, PeggyLeg03_21, Persistence_21, PhluffyCoco_18, Phrank15_22, Pucara_21, RadFad_22, Raphaella_22, RedFox_18, Renna12_19, Richie_22, Ruchi_19, Sakai_22, Seahorse_23, TaylorSipht_19, Tiff81_24, YoungHarleezy_22,

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

- Coral_19, Cote_20, Daob_20, Kepler_19, LittleTokyo_19, Melons_20, Polka_19, Vulpecula_19,

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

- Edmundo_70, Kharcho_46, Kovu_68, Laroye_70, LiSara_67, Ottawa_46, Salgado_70, Shrooms_68, Waltz_67, Wheelbite_66,

Summary by start number:

Start 7:

- Found in 18 of 68 (26.5%) of genes in pham
- Manual Annotations of this start: 7 of 49
- Called 38.9% of time when present
- Phage (with cluster) where this start called: Edmundo_70 (AL), Laroye_70 (AL), LiSara_67 (AL), Salgado_70 (AL), Shrooms_68 (AL), Waltz_67 (AL), Wheelbite_66 (AL),

Start 8:

- Found in 3 of 68 (4.4%) of genes in pham
- Manual Annotations of this start: 2 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kharcho_46 (FM), Kovu_68 (AL), Ottawa_46 (FM),

Start 10:

- Found in 9 of 68 (13.2%) of genes in pham
- Manual Annotations of this start: 6 of 49
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Coral_19 (AS2), Cote_20 (AS2), Daob_20 (AS2), Kepler_19 (AS2), Melons_20 (AS2), Polka_19 (AS2),

Start 11:

- Found in 7 of 68 (10.3%) of genes in pham
- Manual Annotations of this start: 2 of 49
- Called 28.6% of time when present
- Phage (with cluster) where this start called: LittleTokyo_19 (AS2), Vulpecula_19 (AS1),

Start 12:

- Found in 58 of 68 (85.3%) of genes in pham
- Manual Annotations of this start: 32 of 49
- Called 86.2% of time when present
- Phage (with cluster) where this start called: Aikyam_22 (AY), Amelia_20 (AS2), Andrew_19 (AS3), Anekin_22 (AY), Auxilium_22 (AY), Basilisk_19 (AS1), BenchScraper_22 (AY), BillyTP_22 (AY), Bridgette_21 (FA), Brynnie_19 (AS1), Chickaboom_18 (AS1), ChuckDuck_21 (FA), Constance_21 (FA), CookieBear_23 (AY), Eesa_19 (AS1), Eileen_21 (FA), Globfish_22 (AY), GlobiWarming_21 (FA), Gorpy_22 (AY), HannahPhantana_20 (AS2), Hestia_22 (AY), Hillester_22 (AY), Isolde_22 (AY), Jamun_19 (AS1), Judy_22 (FA), Juno112_18 (AS3), KHumphrey_18 (AS3), Karkharias_21 (FA), Kuleana_19 (AS2), Leona_18 (AS3), Lunar_20 (AS2), MidnightRain_22 (AY), Orcanus_19 (AS1), Peas_21 (FA), PeggyLeg03_21 (FA), Persistence_21 (AY), PhluffyCoco_18 (AS3), Phrank15_22 (AY), Pucara_21 (FA), RadFad_22 (AY), Raphaella_22 (AY), RedFox_18 (AS3), Renna12_19 (AS3), Richie_22 (AY), Ruchi_19 (AS1), Sakai_22 (AY), Seahorse_23 (AY), TaylorSipht_19 (AS1), Tiff81_24 (AY), YoungHarleezy_22 (AY),

Summary by clusters:

There are 7 clusters represented in this pham: AS3, AS2, AS1, AL, FA, AY, FM,

Info for manual annotations of cluster AL:

- Start number 7 was manually annotated 7 times for cluster AL.

Info for manual annotations of cluster AS1:

- Start number 11 was manually annotated 1 time for cluster AS1.
- Start number 12 was manually annotated 7 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 10 was manually annotated 6 times for cluster AS2.
- Start number 11 was manually annotated 1 time for cluster AS2.
- Start number 12 was manually annotated 3 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 12 was manually annotated 4 times for cluster AS3.

Info for manual annotations of cluster AY:

- Start number 12 was manually annotated 11 times for cluster AY.

Info for manual annotations of cluster FA:

•Start number 12 was manually annotated 7 times for cluster FA.

Info for manual annotations of cluster FM:

•Start number 8 was manually annotated 2 times for cluster FM.

Gene Information:

Gene: Aikyam_22 Start: 16934, Stop: 17893, Start Num: 12

Candidate Starts for Aikyam_22:

(Start: 12 @16934 has 32 MA's), (13, 16943), (49, 17198), (51, 17204), (52, 17213), (54, 17216), (55, 17219), (58, 17240), (75, 17369), (89, 17609), (97, 17696), (108, 17783), (118, 17876),

Gene: Amelia_20 Start: 14633, Stop: 15586, Start Num: 12

Candidate Starts for Amelia_20:

(1, 14417), (5, 14570), (Start: 10 @14627 has 6 MA's), (Start: 12 @14633 has 32 MA's), (21, 14708), (23, 14717), (25, 14732), (27, 14741), (33, 14783), (34, 14786), (36, 14804), (40, 14846), (41, 14852), (56, 14933), (64, 14984), (65, 14987), (66, 14999), (71, 15044), (78, 15098), (83, 15146), (84, 15194), (87, 15260), (97, 15389), (99, 15401), (101, 15416), (102, 15419), (111, 15503), (113, 15527), (114, 15530), (117, 15563),

Gene: Andrew_19 Start: 14644, Stop: 15597, Start Num: 12

Candidate Starts for Andrew_19:

(Start: 12 @14644 has 32 MA's), (21, 14716), (23, 14725), (25, 14740), (26, 14743), (34, 14794), (36, 14812), (48, 14914), (56, 14941), (65, 14995), (66, 15007), (67, 15013), (71, 15052), (74, 15073), (79, 15109), (86, 15232), (90, 15328), (94, 15352), (97, 15400), (99, 15412), (101, 15427), (106, 15472), (111, 15514), (113, 15538),

Gene: Anekin_22 Start: 16896, Stop: 17858, Start Num: 12

Candidate Starts for Anekin_22:

(3, 16785), (6, 16845), (Start: 7 @16869 has 7 MA's), (Start: 12 @16896 has 32 MA's), (13, 16905), (16, 16917), (19, 16950), (29, 17010), (41, 17106), (42, 17109), (45, 17133), (46, 17151), (51, 17166), (99, 17673), (108, 17748), (109, 17751), (118, 17841),

Gene: Auxilium_22 Start: 16933, Stop: 17892, Start Num: 12

Candidate Starts for Auxilium_22:

(Start: 12 @16933 has 32 MA's), (13, 16942), (49, 17197), (51, 17203), (52, 17212), (55, 17218), (58, 17239), (75, 17368), (89, 17608), (97, 17695), (108, 17782), (118, 17875),

Gene: Basilisk_19 Start: 15922, Stop: 16863, Start Num: 12

Candidate Starts for Basilisk_19:

(Start: 12 @15922 has 32 MA's), (15, 15940), (21, 15988), (25, 16012), (27, 16021), (33, 16063), (35, 16081), (36, 16084), (41, 16132), (53, 16204), (66, 16276), (78, 16375), (101, 16693), (106, 16738), (113, 16804),

Gene: BenchScraper_22 Start: 16948, Stop: 17907, Start Num: 12

Candidate Starts for BenchScraper_22:

(Start: 12 @16948 has 32 MA's), (13, 16957), (16, 16969), (49, 17212), (51, 17218), (52, 17227), (55, 17233), (58, 17254), (75, 17383), (89, 17623), (97, 17710), (103, 17743), (108, 17797), (118, 17890),

Gene: BillyTP_22 Start: 16717, Stop: 17676, Start Num: 12

Candidate Starts for BillyTP_22:

(Start: 12 @16717 has 32 MA's), (13, 16726), (49, 16981), (51, 16987), (52, 16996), (55, 17002), (58, 17023), (75, 17152), (89, 17392), (97, 17479), (108, 17566), (118, 17659),

Gene: Bridgette_21 Start: 16995, Stop: 17957, Start Num: 12

Candidate Starts for Bridgette_21:

(4, 16923), (Start: 7 @16968 has 7 MA's), (Start: 12 @16995 has 32 MA's), (16, 17016), (25, 17085), (45, 17232), (46, 17250), (51, 17265), (58, 17301), (66, 17358), (68, 17367), (81, 17478), (89, 17673), (97, 17760), (118, 17940),

Gene: Brynnie_19 Start: 15734, Stop: 16675, Start Num: 12

Candidate Starts for Brynnie_19:

(Start: 11 @15731 has 2 MA's), (Start: 12 @15734 has 32 MA's), (15, 15752), (21, 15800), (25, 15824), (27, 15833), (33, 15875), (35, 15893), (36, 15896), (41, 15944), (53, 16016), (66, 16088), (78, 16187), (101, 16505), (106, 16550), (113, 16616),

Gene: Chickaboom_18 Start: 14660, Stop: 15601, Start Num: 12

Candidate Starts for Chickaboom_18:

(Start: 11 @14657 has 2 MA's), (Start: 12 @14660 has 32 MA's), (15, 14678), (21, 14726), (25, 14750), (27, 14759), (33, 14801), (35, 14819), (36, 14822), (41, 14870), (53, 14942), (66, 15014), (78, 15113), (101, 15431), (106, 15476), (113, 15542),

Gene: ChuckDuck_21 Start: 16837, Stop: 17793, Start Num: 12

Candidate Starts for ChuckDuck_21:

(Start: 7 @16810 has 7 MA's), (Start: 12 @16837 has 32 MA's), (16, 16858), (34, 16981), (51, 17107), (69, 17230), (70, 17233), (75, 17272), (80, 17305), (81, 17314), (89, 17509), (108, 17683), (118, 17776),

Gene: Constance_21 Start: 16977, Stop: 17933, Start Num: 12

Candidate Starts for Constance_21:

(4, 16905), (Start: 7 @16950 has 7 MA's), (Start: 12 @16977 has 32 MA's), (16, 16998), (51, 17247), (66, 17334), (75, 17412), (81, 17454), (89, 17649), (97, 17736), (108, 17823), (118, 17916),

Gene: CookieBear_23 Start: 16933, Stop: 17892, Start Num: 12

Candidate Starts for CookieBear_23:

(Start: 12 @16933 has 32 MA's), (13, 16942), (49, 17197), (51, 17203), (52, 17212), (55, 17218), (58, 17239), (75, 17368), (89, 17608), (95, 17650), (97, 17695), (108, 17782), (118, 17875),

Gene: Coral_19 Start: 14466, Stop: 15425, Start Num: 10

Candidate Starts for Coral_19:

(1, 14256), (5, 14409), (Start: 10 @14466 has 6 MA's), (Start: 12 @14472 has 32 MA's), (21, 14547), (23, 14556), (25, 14571), (27, 14580), (33, 14622), (34, 14625), (36, 14643), (40, 14685), (41, 14691), (56, 14772), (64, 14823), (65, 14826), (66, 14838), (71, 14883), (78, 14937), (83, 14985), (84, 15033), (87, 15099), (97, 15228), (99, 15240), (101, 15255), (102, 15258), (111, 15342), (113, 15366), (114, 15369), (117, 15402),

Gene: Cote_20 Start: 14627, Stop: 15586, Start Num: 10

Candidate Starts for Cote_20:

(1, 14417), (5, 14570), (Start: 10 @14627 has 6 MA's), (Start: 12 @14633 has 32 MA's), (21, 14708), (23, 14717), (25, 14732), (27, 14741), (33, 14783), (34, 14786), (36, 14804), (40, 14846), (41, 14852), (56, 14933), (64, 14984), (65, 14987), (66, 14999), (71, 15044), (78, 15098), (83, 15146), (84, 15194), (87, 15260), (97, 15389), (99, 15401), (101, 15416), (102, 15419), (111, 15503), (113, 15527), (114,

15530), (117, 15563),

Gene: Daob_20 Start: 14630, Stop: 15589, Start Num: 10

Candidate Starts for Daob_20:

(1, 14420), (5, 14573), (Start: 10 @14630 has 6 MA's), (Start: 12 @14636 has 32 MA's), (21, 14711), (23, 14720), (25, 14735), (27, 14744), (33, 14786), (34, 14789), (36, 14807), (40, 14849), (41, 14855), (56, 14936), (64, 14987), (65, 14990), (66, 15002), (71, 15047), (78, 15101), (83, 15149), (84, 15197), (87, 15263), (97, 15392), (99, 15404), (101, 15419), (102, 15422), (111, 15506), (113, 15530), (114, 15533), (117, 15566),

Gene: Edmundo_70 Start: 43370, Stop: 44359, Start Num: 7

Candidate Starts for Edmundo_70:

(Start: 7 @43370 has 7 MA's), (17, 43442), (20, 43460), (26, 43496), (32, 43532), (37, 43574), (39, 43604), (41, 43613), (43, 43625), (47, 43661), (48, 43667), (59, 43712), (65, 43754), (70, 43802), (85, 43985), (92, 44108), (104, 44222), (105, 44228), (119, 44354),

Gene: Eesa_19 Start: 15885, Stop: 16823, Start Num: 12

Candidate Starts for Eesa_19:

(Start: 12 @15885 has 32 MA's), (21, 15951), (23, 15960), (24, 15969), (33, 16026), (34, 16029), (36, 16047), (41, 16095), (46, 16140), (48, 16149), (64, 16224), (66, 16239), (71, 16284), (77, 16329), (94, 16578), (101, 16653), (106, 16698), (113, 16764), (115, 16776), (117, 16800),

Gene: Eileen_21 Start: 16939, Stop: 17895, Start Num: 12

Candidate Starts for Eileen_21:

(Start: 12 @16939 has 32 MA's), (16, 16960), (29, 17053), (51, 17209), (54, 17221), (66, 17296), (75, 17374), (80, 17407), (81, 17416), (89, 17611), (97, 17698), (118, 17878),

Gene: Globfish_22 Start: 17006, Stop: 17965, Start Num: 12

Candidate Starts for Globfish_22:

(3, 16895), (4, 16934), (6, 16955), (Start: 7 @16979 has 7 MA's), (Start: 12 @17006 has 32 MA's), (13, 17015), (16, 17027), (29, 17120), (58, 17312), (66, 17363), (75, 17441), (89, 17681), (95, 17723), (97, 17768), (99, 17780), (108, 17855), (118, 17948),

Gene: GlobiWarming_21 Start: 16931, Stop: 17893, Start Num: 12

Candidate Starts for GlobiWarming_21:

(Start: 7 @16904 has 7 MA's), (Start: 12 @16931 has 32 MA's), (16, 16952), (25, 17021), (45, 17168), (46, 17186), (51, 17201), (58, 17237), (61, 17258), (66, 17294), (68, 17303), (81, 17414), (89, 17609), (97, 17696), (118, 17876),

Gene: Gorpy_22 Start: 16942, Stop: 17901, Start Num: 12

Candidate Starts for Gorpy_22:

(Start: 12 @16942 has 32 MA's), (13, 16951), (49, 17206), (51, 17212), (52, 17221), (55, 17227), (58, 17248), (75, 17377), (89, 17617), (97, 17704), (108, 17791), (118, 17884),

Gene: HannahPhantana_20 Start: 14636, Stop: 15589, Start Num: 12

Candidate Starts for HannahPhantana_20:

(1, 14420), (5, 14573), (Start: 10 @14630 has 6 MA's), (Start: 12 @14636 has 32 MA's), (21, 14711), (23, 14720), (25, 14735), (27, 14744), (33, 14786), (34, 14789), (36, 14807), (40, 14849), (41, 14855), (56, 14936), (64, 14987), (65, 14990), (66, 15002), (71, 15047), (78, 15101), (83, 15149), (84, 15197), (87, 15263), (97, 15392), (99, 15404), (101, 15419), (102, 15422), (111, 15506), (113, 15530), (114, 15533), (117, 15566),

Gene: Hestia_22 Start: 17111, Stop: 18070, Start Num: 12

Candidate Starts for Hestia_22:

(Start: 12 @17111 has 32 MA's), (13, 17120), (49, 17375), (51, 17381), (52, 17390), (55, 17396), (58, 17417), (66, 17468), (75, 17546), (89, 17786), (97, 17873), (108, 17960), (118, 18053),

Gene: Hillester_22 Start: 16933, Stop: 17892, Start Num: 12

Candidate Starts for Hillester_22:

(Start: 12 @16933 has 32 MA's), (13, 16942), (49, 17197), (51, 17203), (52, 17212), (55, 17218), (58, 17239), (75, 17368), (89, 17608), (97, 17695), (99, 17707), (108, 17782), (110, 17788), (118, 17875),

Gene: Isolde_22 Start: 16768, Stop: 17727, Start Num: 12

Candidate Starts for Isolde_22:

(Start: 12 @16768 has 32 MA's), (13, 16777), (16, 16789), (49, 17032), (51, 17038), (52, 17047), (55, 17053), (58, 17074), (75, 17203), (89, 17443), (95, 17485), (97, 17530), (108, 17617), (118, 17710),

Gene: Jamun_19 Start: 15328, Stop: 16269, Start Num: 12

Candidate Starts for Jamun_19:

(Start: 11 @15325 has 2 MA's), (Start: 12 @15328 has 32 MA's), (15, 15346), (21, 15394), (25, 15418), (27, 15427), (33, 15469), (35, 15487), (36, 15490), (41, 15538), (53, 15610), (66, 15682), (78, 15781), (101, 16099), (106, 16144), (113, 16210),

Gene: Judy_22 Start: 17248, Stop: 18204, Start Num: 12

Candidate Starts for Judy_22:

(4, 17176), (Start: 7 @17221 has 7 MA's), (Start: 12 @17248 has 32 MA's), (16, 17269), (51, 17518), (66, 17605), (75, 17683), (81, 17725), (89, 17920), (91, 17944), (97, 18007), (118, 18187),

Gene: Juno112_18 Start: 14181, Stop: 15140, Start Num: 12

Candidate Starts for Juno112_18:

(Start: 12 @14181 has 32 MA's), (21, 14253), (26, 14280), (28, 14295), (36, 14349), (41, 14397), (48, 14451), (56, 14478), (66, 14544), (67, 14550), (71, 14589), (74, 14610), (97, 14943), (98, 14952), (99, 14955), (101, 14970), (109, 15033), (113, 15081),

Gene: KHumphrey_18 Start: 14178, Stop: 15137, Start Num: 12

Candidate Starts for KHumphrey_18:

(Start: 12 @14178 has 32 MA's), (21, 14250), (26, 14277), (28, 14292), (36, 14346), (41, 14394), (48, 14448), (56, 14475), (66, 14541), (67, 14547), (71, 14586), (74, 14607), (97, 14940), (98, 14949), (99, 14952), (101, 14967), (109, 15030), (113, 15078),

Gene: Karkharias_21 Start: 16935, Stop: 17897, Start Num: 12

Candidate Starts for Karkharias_21:

(4, 16863), (Start: 7 @16908 has 7 MA's), (Start: 12 @16935 has 32 MA's), (16, 16956), (25, 17025), (45, 17172), (46, 17190), (51, 17205), (58, 17241), (66, 17298), (68, 17307), (81, 17418), (89, 17613), (97, 17700), (118, 17880),

Gene: Kepler_19 Start: 14465, Stop: 15424, Start Num: 10

Candidate Starts for Kepler_19:

(1, 14255), (5, 14408), (Start: 10 @14465 has 6 MA's), (Start: 12 @14471 has 32 MA's), (21, 14546), (23, 14555), (25, 14570), (27, 14579), (33, 14621), (34, 14624), (36, 14642), (40, 14684), (41, 14690), (56, 14771), (64, 14822), (65, 14825), (66, 14837), (71, 14882), (78, 14936), (83, 14984), (84, 15032), (87, 15098), (97, 15227), (99, 15239), (101, 15254), (102, 15257), (111, 15341), (113, 15365), (114, 15368), (117, 15401),

Gene: Kharcho_46 Start: 25166, Stop: 26164, Start Num: 8

Candidate Starts for Kharcho_46:

(Start: 8 @25166 has 2 MA's), (29, 25307), (38, 25367), (42, 25406), (50, 25460), (53, 25475), (62, 25526), (105, 26030),

Gene: Kovu_68 Start: 43241, Stop: 44224, Start Num: 8

Candidate Starts for Kovu_68:

(Start: 8 @43241 has 2 MA's), (17, 43313), (24, 43355), (33, 43412), (47, 43529), (48, 43535), (50, 43538), (57, 43565), (63, 43604), (65, 43622), (69, 43667), (70, 43670), (72, 43694), (88, 43925), (95, 43982), (96, 44024), (100, 44045), (101, 44054), (112, 44159),

Gene: Kuleana_19 Start: 14642, Stop: 15589, Start Num: 12

Candidate Starts for Kuleana_19:

(1, 14432), (5, 14585), (Start: 11 @14639 has 2 MA's), (Start: 12 @14642 has 32 MA's), (21, 14708), (27, 14741), (28, 14750), (33, 14783), (36, 14804), (41, 14852), (59, 14948), (82, 15116), (84, 15194), (93, 15338), (97, 15389), (100, 15407), (113, 15527), (116, 15548), (117, 15563),

Gene: Laroye_70 Start: 42761, Stop: 43750, Start Num: 7

Candidate Starts for Laroye_70:

(Start: 7 @42761 has 7 MA's), (26, 42887), (32, 42923), (39, 42995), (41, 43004), (43, 43016), (48, 43058), (57, 43088), (59, 43103), (70, 43193), (85, 43376), (92, 43499), (99, 43565), (104, 43613), (105, 43619), (119, 43745),

Gene: Leona_18 Start: 14234, Stop: 15199, Start Num: 12

Candidate Starts for Leona_18:

(Start: 12 @14234 has 32 MA's), (21, 14306), (26, 14333), (27, 14339), (28, 14348), (34, 14384), (36, 14402), (41, 14450), (48, 14504), (56, 14531), (59, 14549), (64, 14582), (73, 14663), (97, 15002), (98, 15011), (99, 15014), (101, 15029), (113, 15140),

Gene: LiSara_67 Start: 42923, Stop: 43912, Start Num: 7

Candidate Starts for LiSara_67:

(Start: 7 @42923 has 7 MA's), (26, 43049), (32, 43085), (39, 43157), (41, 43166), (43, 43178), (48, 43220), (57, 43250), (59, 43265), (70, 43355), (85, 43538), (92, 43661), (99, 43727), (104, 43775), (105, 43781), (119, 43907),

Gene: LittleTokyo_19 Start: 14585, Stop: 15535, Start Num: 11

Candidate Starts for LittleTokyo_19:

(9, 14576), (Start: 11 @14585 has 2 MA's), (Start: 12 @14588 has 32 MA's), (21, 14654), (22, 14657), (26, 14681), (27, 14687), (28, 14696), (33, 14729), (36, 14750), (44, 14816), (48, 14852), (59, 14894), (65, 14930), (66, 14942), (67, 14948), (82, 15062), (86, 15170), (93, 15284), (97, 15335), (100, 15353), (113, 15473), (115, 15485), (116, 15494), (117, 15509),

Gene: Lunar_20 Start: 14633, Stop: 15586, Start Num: 12

Candidate Starts for Lunar_20:

(1, 14417), (5, 14570), (Start: 10 @14627 has 6 MA's), (Start: 12 @14633 has 32 MA's), (21, 14708), (23, 14717), (25, 14732), (27, 14741), (33, 14783), (34, 14786), (36, 14804), (40, 14846), (41, 14852), (56, 14933), (64, 14984), (65, 14987), (66, 14999), (71, 15044), (78, 15098), (83, 15146), (84, 15194), (87, 15260), (97, 15389), (99, 15401), (101, 15416), (102, 15419), (111, 15503), (113, 15527), (114, 15530), (117, 15563),

Gene: Melons_20 Start: 14627, Stop: 15586, Start Num: 10

Candidate Starts for Melons_20:

(1, 14417), (5, 14570), (Start: 10 @14627 has 6 MA's), (Start: 12 @14633 has 32 MA's), (21, 14708), (23, 14717), (25, 14732), (27, 14741), (33, 14783), (34, 14786), (36, 14804), (40, 14846), (41, 14852), (56, 14933), (64, 14984), (65, 14987), (66, 14999), (71, 15044), (78, 15098), (83, 15146), (84, 15194),

(87, 15260), (97, 15389), (99, 15401), (101, 15416), (102, 15419), (111, 15503), (113, 15527), (114, 15530), (117, 15563),

Gene: MidnightRain_22 Start: 16932, Stop: 17891, Start Num: 12

Candidate Starts for MidnightRain_22:

(Start: 12 @16932 has 32 MA's), (13, 16941), (49, 17196), (51, 17202), (52, 17211), (55, 17217), (58, 17238), (75, 17367), (89, 17607), (95, 17649), (97, 17694), (108, 17781), (118, 17874),

Gene: Orcanus_19 Start: 15585, Stop: 16523, Start Num: 12

Candidate Starts for Orcanus_19:

(Start: 12 @15585 has 32 MA's), (21, 15651), (23, 15660), (24, 15669), (33, 15726), (34, 15729), (36, 15747), (41, 15795), (46, 15840), (48, 15849), (64, 15924), (66, 15939), (67, 15945), (71, 15984), (77, 16029), (94, 16278), (101, 16353), (106, 16398), (113, 16464), (115, 16476), (117, 16500),

Gene: Ottawa_46 Start: 25164, Stop: 26162, Start Num: 8

Candidate Starts for Ottawa_46:

(Start: 8 @25164 has 2 MA's), (29, 25305), (38, 25365), (42, 25404), (50, 25458), (53, 25473), (62, 25524), (105, 26028),

Gene: Peas_21 Start: 16939, Stop: 17895, Start Num: 12

Candidate Starts for Peas_21:

(Start: 12 @16939 has 32 MA's), (16, 16960), (29, 17053), (51, 17209), (54, 17221), (66, 17296), (75, 17374), (80, 17407), (81, 17416), (89, 17611), (97, 17698), (118, 17878),

Gene: PeggyLeg03_21 Start: 16977, Stop: 17933, Start Num: 12

Candidate Starts for PeggyLeg03_21:

(4, 16905), (Start: 7 @16950 has 7 MA's), (Start: 12 @16977 has 32 MA's), (14, 16989), (16, 16998), (51, 17247), (66, 17334), (75, 17412), (81, 17454), (89, 17649), (97, 17736), (108, 17823), (118, 17916),

Gene: Persistence_21 Start: 16854, Stop: 17816, Start Num: 12

Candidate Starts for Persistence_21:

(3, 16743), (4, 16782), (6, 16803), (Start: 7 @16827 has 7 MA's), (Start: 12 @16854 has 32 MA's), (13, 16863), (16, 16875), (19, 16908), (41, 17064), (45, 17091), (51, 17124), (58, 17160), (66, 17217), (75, 17295), (99, 17631), (101, 17646), (103, 17652), (111, 17733), (118, 17799),

Gene: PhluffyCoco_18 Start: 14180, Stop: 15139, Start Num: 12

Candidate Starts for PhluffyCoco_18:

(Start: 12 @14180 has 32 MA's), (21, 14252), (26, 14279), (28, 14294), (36, 14348), (41, 14396), (48, 14450), (56, 14477), (66, 14543), (67, 14549), (71, 14588), (74, 14609), (79, 14651), (97, 14942), (98, 14951), (99, 14954), (101, 14969), (109, 15032), (113, 15080),

Gene: Phrank15_22 Start: 16867, Stop: 17826, Start Num: 12

Candidate Starts for Phrank15_22:

(Start: 12 @16867 has 32 MA's), (13, 16876), (16, 16888), (49, 17131), (51, 17137), (52, 17146), (55, 17152), (58, 17173), (75, 17302), (89, 17542), (95, 17584), (97, 17629), (108, 17716), (118, 17809),

Gene: Polka_19 Start: 14469, Stop: 15428, Start Num: 10

Candidate Starts for Polka_19:

(Start: 10 @14469 has 6 MA's), (Start: 12 @14475 has 32 MA's), (21, 14550), (23, 14559), (25, 14574), (34, 14628), (36, 14646), (40, 14688), (41, 14694), (56, 14775), (64, 14826), (65, 14829), (66, 14841), (71, 14886), (78, 14940), (83, 14988), (84, 15036), (87, 15102), (97, 15231), (99, 15243), (101, 15258), (102, 15261), (111, 15345), (113, 15369), (114, 15372), (117, 15405),

Gene: Pucara_21 Start: 16938, Stop: 17894, Start Num: 12

Candidate Starts for Pucara_21:

(Start: 7 @16911 has 7 MA's), (Start: 12 @16938 has 32 MA's), (16, 16959), (29, 17052), (51, 17208), (54, 17220), (66, 17295), (75, 17373), (80, 17406), (81, 17415), (89, 17610), (97, 17697), (118, 17877),

Gene: RadFad_22 Start: 16933, Stop: 17892, Start Num: 12

Candidate Starts for RadFad_22:

(Start: 12 @16933 has 32 MA's), (13, 16942), (49, 17197), (51, 17203), (52, 17212), (55, 17218), (58, 17239), (75, 17368), (89, 17608), (97, 17695), (99, 17707), (108, 17782), (110, 17788), (118, 17875),

Gene: Raphaella_22 Start: 16933, Stop: 17892, Start Num: 12

Candidate Starts for Raphaella_22:

(Start: 12 @16933 has 32 MA's), (13, 16942), (49, 17197), (51, 17203), (52, 17212), (55, 17218), (58, 17239), (75, 17368), (89, 17608), (97, 17695), (108, 17782), (118, 17875),

Gene: RedFox_18 Start: 14180, Stop: 15139, Start Num: 12

Candidate Starts for RedFox_18:

(Start: 12 @14180 has 32 MA's), (21, 14252), (26, 14279), (28, 14294), (36, 14348), (41, 14396), (48, 14450), (56, 14477), (66, 14543), (67, 14549), (71, 14588), (74, 14609), (79, 14651), (97, 14942), (98, 14951), (99, 14954), (101, 14969), (109, 15032), (113, 15080),

Gene: Renna12_19 Start: 14524, Stop: 15489, Start Num: 12

Candidate Starts for Renna12_19:

(Start: 12 @14524 has 32 MA's), (21, 14596), (25, 14620), (26, 14623), (28, 14638), (34, 14674), (36, 14692), (41, 14740), (48, 14794), (56, 14821), (66, 14887), (67, 14893), (97, 15292), (99, 15304), (101, 15319), (109, 15382), (111, 15406), (113, 15430),

Gene: Richie_22 Start: 16948, Stop: 17907, Start Num: 12

Candidate Starts for Richie_22:

(Start: 12 @16948 has 32 MA's), (13, 16957), (16, 16969), (49, 17212), (51, 17218), (52, 17227), (55, 17233), (58, 17254), (75, 17383), (89, 17623), (97, 17710), (103, 17743), (108, 17797), (118, 17890),

Gene: Ruchi_19 Start: 15868, Stop: 16809, Start Num: 12

Candidate Starts for Ruchi_19:

(Start: 11 @15865 has 2 MA's), (Start: 12 @15868 has 32 MA's), (15, 15886), (21, 15934), (25, 15958), (27, 15967), (33, 16009), (35, 16027), (36, 16030), (41, 16078), (53, 16150), (66, 16222), (78, 16321), (101, 16639), (106, 16684), (107, 16696), (113, 16750),

Gene: Sakai_22 Start: 16942, Stop: 17901, Start Num: 12

Candidate Starts for Sakai_22:

(Start: 12 @16942 has 32 MA's), (13, 16951), (49, 17206), (51, 17212), (52, 17221), (55, 17227), (58, 17248), (75, 17377), (89, 17617), (97, 17704), (108, 17791), (118, 17884),

Gene: Salgado_70 Start: 42577, Stop: 43566, Start Num: 7

Candidate Starts for Salgado_70:

(2, 42478), (Start: 7 @42577 has 7 MA's), (26, 42703), (32, 42739), (39, 42811), (41, 42820), (43, 42832), (48, 42874), (57, 42904), (59, 42919), (70, 43009), (85, 43192), (92, 43315), (99, 43381), (104, 43429), (105, 43435), (119, 43561),

Gene: Seahorse_23 Start: 17300, Stop: 18259, Start Num: 12

Candidate Starts for Seahorse_23:

(Start: 12 @17300 has 32 MA's), (13, 17309), (16, 17321), (51, 17570), (52, 17579), (55, 17585), (58, 17606), (75, 17735), (97, 18062), (118, 18242),

Gene: Shrooms_68 Start: 41098, Stop: 42087, Start Num: 7

Candidate Starts for Shrooms_68:

(2, 40999), (Start: 7 @41098 has 7 MA's), (15, 41152), (17, 41170), (20, 41188), (26, 41224), (27, 41230), (31, 41254), (32, 41260), (47, 41389), (48, 41395), (57, 41425), (59, 41440), (60, 41446), (65, 41482), (68, 41503), (70, 41530), (85, 41713), (101, 41917), (105, 41956), (119, 42082),

Gene: TaylorSipt_19 Start: 14602, Stop: 15540, Start Num: 12

Candidate Starts for TaylorSipt_19:

(Start: 12 @14602 has 32 MA's), (21, 14668), (23, 14677), (27, 14701), (33, 14743), (36, 14764), (41, 14812), (71, 15001), (76, 15034), (77, 15046), (94, 15295), (113, 15481), (115, 15493), (117, 15517),

Gene: Tiff81_24 Start: 17028, Stop: 17987, Start Num: 12

Candidate Starts for Tiff81_24:

(Start: 12 @17028 has 32 MA's), (13, 17037), (16, 17049), (49, 17292), (51, 17298), (52, 17307), (55, 17313), (58, 17334), (75, 17463), (97, 17790), (118, 17970),

Gene: Vulpecula_19 Start: 15323, Stop: 16267, Start Num: 11

Candidate Starts for Vulpecula_19:

(Start: 11 @15323 has 2 MA's), (Start: 12 @15326 has 32 MA's), (15, 15344), (21, 15392), (25, 15416), (27, 15425), (33, 15467), (35, 15485), (36, 15488), (41, 15536), (53, 15608), (66, 15680), (78, 15779), (101, 16097), (106, 16142), (113, 16208),

Gene: Waltz_67 Start: 41111, Stop: 42100, Start Num: 7

Candidate Starts for Waltz_67:

(2, 41012), (Start: 7 @41111 has 7 MA's), (15, 41165), (17, 41183), (18, 41189), (20, 41201), (26, 41237), (30, 41264), (31, 41267), (32, 41273), (47, 41402), (48, 41408), (57, 41438), (59, 41453), (65, 41495), (68, 41516), (70, 41543), (85, 41726), (105, 41969), (119, 42095),

Gene: Wheelbite_66 Start: 42734, Stop: 43717, Start Num: 7

Candidate Starts for Wheelbite_66:

(Start: 7 @42734 has 7 MA's), (26, 42854), (27, 42860), (32, 42890), (37, 42932), (39, 42962), (41, 42971), (47, 43019), (48, 43025), (59, 43070), (65, 43112), (70, 43160), (79, 43235), (92, 43466), (99, 43532), (104, 43580), (105, 43586), (119, 43712),

Gene: YoungHarleezy_22 Start: 16946, Stop: 17905, Start Num: 12

Candidate Starts for YoungHarleezy_22:

(Start: 12 @16946 has 32 MA's), (13, 16955), (49, 17210), (51, 17216), (52, 17225), (55, 17231), (58, 17252), (75, 17381), (89, 17621), (95, 17663), (97, 17708), (108, 17795), (118, 17888),