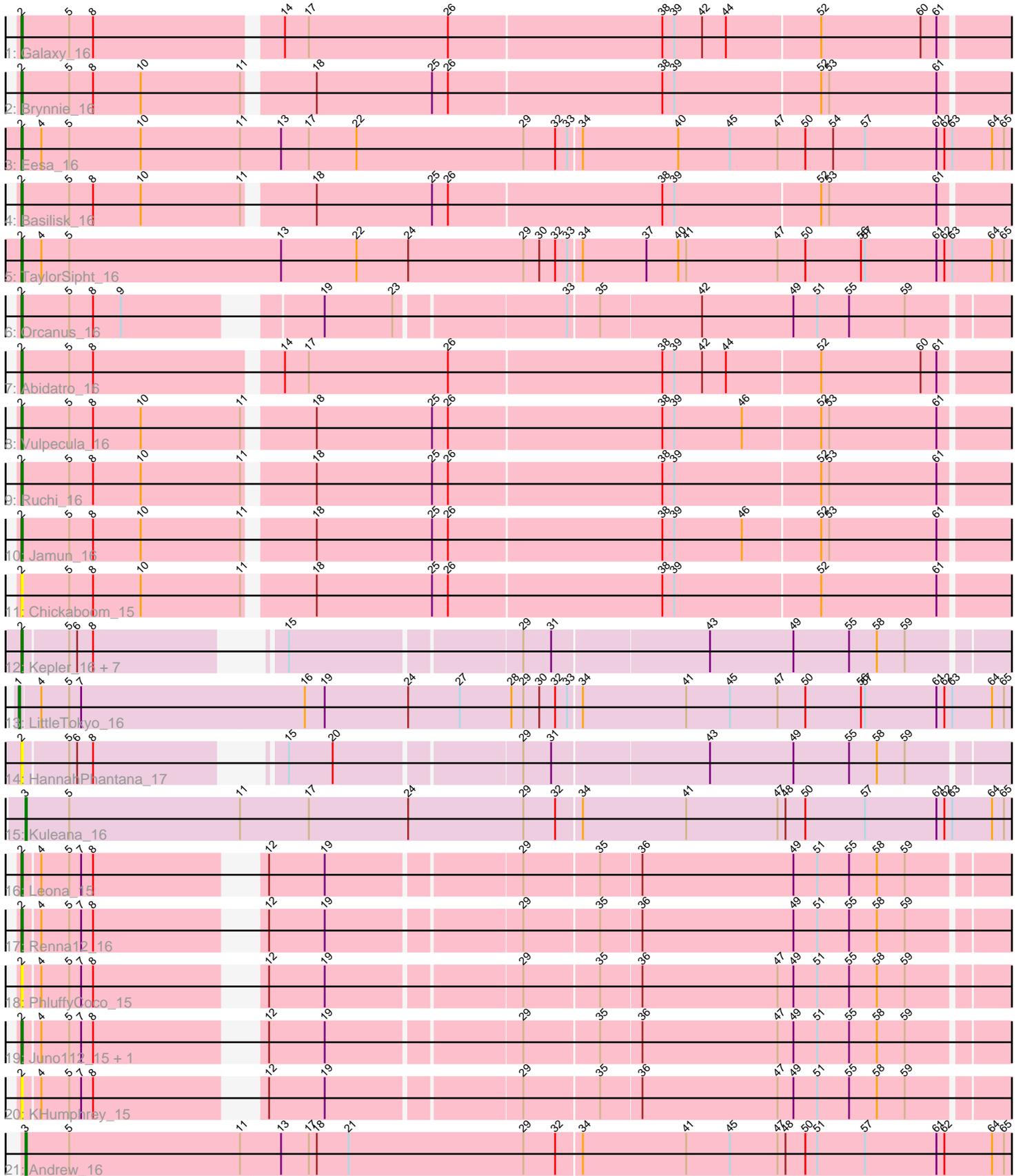


Zoomed Pham 58682



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 58682 Report

This analysis was run 04/05/24 on database version 557.

Pham number 58682 has 29 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Galaxy_16
- Track 2 : Brynnie_16
- Track 3 : Eesa_16
- Track 4 : Basilisk_16
- Track 5 : TaylorSipht_16
- Track 6 : Orcanus_16
- Track 7 : Abidatro_16
- Track 8 : Vulpecula_16
- Track 9 : Ruchi_16
- Track 10 : Jamun_16
- Track 11 : Chickaboom_15
- Track 12 : Kepler_16, Amelia_17, Melons_17, Coral_16, Polka_16, Cote_17, Lunar_17, Daob_17
- Track 13 : LittleTokyo_16
- Track 14 : HannahPhantana_17
- Track 15 : Kuleana_16
- Track 16 : Leona_15
- Track 17 : Renna12_16
- Track 18 : PhluffyCoco_15
- Track 19 : Juno112_15, RedFox_15
- Track 20 : KHumphrey_15
- Track 21 : Andrew_16

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 21 of the 24 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abidatro_16, Amelia_17, Basilisk_16, Brynnie_16, Chickaboom_15, Coral_16, Cote_17, Daob_17, Eesa_16, Galaxy_16, HannahPhantana_17, Jamun_16, Juno112_15, KHumphrey_15, Kepler_16, Leona_15, Lunar_17, Melons_17, Orcanus_16, PhluffyCoco_15, Polka_16, RedFox_15, Renna12_16, Ruchi_16, TaylorSipht_16, Vulpecula_16,

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

-

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

- Andrew_16, Kuleana_16, LittleTokyo_16,

Summary by start number:

Start 1:

- Found in 1 of 29 (3.4%) of genes in pham
- Manual Annotations of this start: 1 of 24
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LittleTokyo_16 (AS2),

Start 2:

- Found in 26 of 29 (89.7%) of genes in pham
- Manual Annotations of this start: 21 of 24
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abidatro_16 (AS1), Amelia_17 (AS2), Basilisk_16 (AS1), Brynnie_16 (AS1), Chickaboom_15 (AS1), Coral_16 (AS2), Cote_17 (AS2), Daob_17 (AS2), Eesa_16 (AS1), Galaxy_16 (AS1), HannahPhantana_17 (AS2), Jamun_16 (AS1), Juno112_15 (AS3), KHumphrey_15 (AS3), Kepler_16 (AS2), Leona_15 (AS3), Lunar_17 (AS2), Melons_17 (AS2), Orcanus_16 (AS1), PhluffyCoco_15 (AS3), Polka_16 (AS2), RedFox_15 (AS3), Renna12_16 (AS3), Ruchi_16 (AS1), TaylorSipht_16 (AS1), Vulpecula_16 (AS1),

Start 3:

- Found in 2 of 29 (6.9%) of genes in pham
- Manual Annotations of this start: 2 of 24
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Andrew_16 (AS3), Kuleana_16 (AS2),

Summary by clusters:

There are 3 clusters represented in this pham: AS3, AS2, AS1,

Info for manual annotations of cluster AS1:

- Start number 2 was manually annotated 10 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 1 was manually annotated 1 time for cluster AS2.
- Start number 2 was manually annotated 8 times for cluster AS2.
- Start number 3 was manually annotated 1 time for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 2 was manually annotated 3 times for cluster AS3.
- Start number 3 was manually annotated 1 time for cluster AS3.

Gene Information:

Gene: Abidatro_16 Start: 10475, Stop: 12856, Start Num: 2

Candidate Starts for Abidatro_16:

(Start: 2 @10475 has 21 MA's), (5, 10511), (8, 10529), (14, 10661), (17, 10679), (26, 10784), (38, 10943), (39, 10952), (42, 10973), (44, 10991), (52, 11060), (60, 11135), (61, 11147), (66, 11201), (73, 11279), (79, 11402), (84, 11477), (87, 11498), (88, 11519), (89, 11531), (92, 11561), (95, 11591), (96, 11594), (98, 11606), (100, 11621), (102, 11633), (104, 11651), (112, 11708), (115, 11726), (117, 11744), (121, 11780), (129, 11837), (130, 11852), (131, 11873), (136, 11915), (137, 11930), (138, 11933), (143, 11969), (146, 11999), (148, 12005), (150, 12020), (153, 12038), (161, 12104), (162, 12116), (163, 12134), (165, 12167), (170, 12236), (171, 12245), (172, 12248), (173, 12269), (180, 12365), (187, 12452), (188, 12494), (194, 12593), (196, 12656), (197, 12668), (204, 12740), (207, 12788),

Gene: Amelia_17 Start: 10375, Stop: 12510, Start Num: 2

Candidate Starts for Amelia_17:

(Start: 2 @10375 has 21 MA's), (5, 10408), (6, 10414), (8, 10426), (15, 10531), (29, 10696), (31, 10717), (43, 10831), (49, 10894), (55, 10936), (58, 10957), (59, 10978), (68, 11059), (69, 11062), (70, 11071), (71, 11083), (72, 11086), (78, 11203), (79, 11233), (82, 11275), (83, 11284), (96, 11401), (101, 11434), (105, 11461), (106, 11485), (109, 11497), (110, 11506), (111, 11515), (117, 11554), (121, 11590), (123, 11602), (125, 11614), (127, 11635), (130, 11662), (132, 11695), (134, 11710), (171, 11872), (173, 11896), (176, 11935), (179, 11971), (187, 12079), (189, 12133), (193, 12199), (194, 12220), (206, 12391), (208, 12424), (209, 12436), (211, 12481), (212, 12502),

Gene: Andrew_16 Start: 10166, Stop: 12529, Start Num: 3

Candidate Starts for Andrew_16:

(Start: 3 @10166 has 2 MA's), (5, 10199), (11, 10328), (13, 10358), (17, 10379), (18, 10385), (21, 10409), (29, 10541), (32, 10565), (34, 10583), (41, 10661), (45, 10694), (47, 10730), (48, 10736), (50, 10751), (51, 10760), (57, 10796), (61, 10850), (62, 10856), (64, 10892), (65, 10901), (67, 10913), (71, 10943), (74, 10997), (76, 11042), (80, 11099), (81, 11135), (85, 11168), (87, 11180), (96, 11279), (99, 11294), (102, 11315), (106, 11363), (117, 11432), (118, 11438), (123, 11480), (125, 11492), (128, 11516), (130, 11540), (132, 11573), (133, 11576), (152, 11726), (170, 11873), (171, 11882), (172, 11885), (173, 11906), (176, 11945), (178, 11966), (181, 12011), (182, 12020), (184, 12044), (188, 12131), (189, 12143), (192, 12206), (194, 12230), (202, 12347), (205, 12389), (206, 12407), (209, 12452), (211, 12497), (212, 12518),

Gene: Basilisk_16 Start: 10798, Stop: 13203, Start Num: 2

Candidate Starts for Basilisk_16:

(Start: 2 @10798 has 21 MA's), (5, 10834), (8, 10852), (10, 10888), (11, 10963), (18, 11008), (25, 11095), (26, 11107), (38, 11266), (39, 11275), (52, 11383), (53, 11389), (61, 11470), (66, 11524), (72, 11563), (81, 11764), (84, 11800), (89, 11854), (95, 11914), (96, 11917), (100, 11944), (104, 11974), (111, 12028), (117, 12067), (119, 12085), (121, 12103), (128, 12151), (131, 12196), (138, 12256), (139, 12268), (142, 12289), (143, 12292), (147, 12325), (148, 12328), (149, 12334), (150, 12343), (151, 12355), (153, 12361), (155, 12376), (157, 12385), (162, 12439), (163, 12457), (165, 12490), (170, 12559), (171, 12568), (172, 12571), (173, 12592), (175, 12628), (180, 12688), (182, 12706), (194, 12916), (206, 13081), (210, 13138),

Gene: Brynnie_16 Start: 10610, Stop: 13015, Start Num: 2

Candidate Starts for Brynnie_16:

(Start: 2 @10610 has 21 MA's), (5, 10646), (8, 10664), (10, 10700), (11, 10775), (18, 10820), (25, 10907), (26, 10919), (38, 11078), (39, 11087), (52, 11195), (53, 11201), (61, 11282), (66, 11336), (72, 11375), (75, 11468), (81, 11576), (84, 11612), (89, 11666), (95, 11726), (96, 11729), (100, 11756), (104, 11786), (111, 11840), (117, 11879), (119, 11897), (121, 11915), (128, 11963), (131, 12008), (137, 12065), (138, 12068), (139, 12080), (142, 12101), (143, 12104), (147, 12137), (148, 12140), (149, 12146), (150, 12155), (151, 12167), (153, 12173), (155, 12188), (157, 12197), (162, 12251),

(163, 12269), (165, 12302), (170, 12371), (171, 12380), (172, 12383), (173, 12404), (175, 12440), (180, 12500), (182, 12518), (194, 12728), (206, 12893), (210, 12950),

Gene: Chickaboom_15 Start: 10149, Stop: 12554, Start Num: 2

Candidate Starts for Chickaboom_15:

(Start: 2 @10149 has 21 MA's), (5, 10185), (8, 10203), (10, 10239), (11, 10314), (18, 10359), (25, 10446), (26, 10458), (38, 10617), (39, 10626), (52, 10734), (61, 10821), (66, 10875), (72, 10914), (73, 10953), (84, 11151), (89, 11205), (96, 11268), (97, 11271), (100, 11295), (112, 11382), (117, 11418), (131, 11547), (137, 11604), (138, 11607), (143, 11643), (145, 11661), (147, 11676), (148, 11679), (149, 11685), (150, 11694), (151, 11706), (153, 11712), (155, 11727), (157, 11736), (159, 11754), (161, 11778), (162, 11790), (163, 11808), (165, 11841), (170, 11910), (171, 11919), (172, 11922), (173, 11943), (175, 11979), (180, 12039), (182, 12057), (194, 12267), (206, 12432),

Gene: Coral_16 Start: 10214, Stop: 12349, Start Num: 2

Candidate Starts for Coral_16:

(Start: 2 @10214 has 21 MA's), (5, 10247), (6, 10253), (8, 10265), (15, 10370), (29, 10535), (31, 10556), (43, 10670), (49, 10733), (55, 10775), (58, 10796), (59, 10817), (68, 10898), (69, 10901), (70, 10910), (71, 10922), (72, 10925), (78, 11042), (79, 11072), (82, 11114), (83, 11123), (96, 11240), (101, 11273), (105, 11300), (106, 11324), (109, 11336), (110, 11345), (111, 11354), (117, 11393), (121, 11429), (123, 11441), (125, 11453), (127, 11474), (130, 11501), (132, 11534), (134, 11549), (171, 11711), (173, 11735), (176, 11774), (179, 11810), (187, 11918), (189, 11972), (193, 12038), (194, 12059), (206, 12230), (208, 12263), (209, 12275), (211, 12320), (212, 12341),

Gene: Cote_17 Start: 10375, Stop: 12510, Start Num: 2

Candidate Starts for Cote_17:

(Start: 2 @10375 has 21 MA's), (5, 10408), (6, 10414), (8, 10426), (15, 10531), (29, 10696), (31, 10717), (43, 10831), (49, 10894), (55, 10936), (58, 10957), (59, 10978), (68, 11059), (69, 11062), (70, 11071), (71, 11083), (72, 11086), (78, 11203), (79, 11233), (82, 11275), (83, 11284), (96, 11401), (101, 11434), (105, 11461), (106, 11485), (109, 11497), (110, 11506), (111, 11515), (117, 11554), (121, 11590), (123, 11602), (125, 11614), (127, 11635), (130, 11662), (132, 11695), (134, 11710), (171, 11872), (173, 11896), (176, 11935), (179, 11971), (187, 12079), (189, 12133), (193, 12199), (194, 12220), (206, 12391), (208, 12424), (209, 12436), (211, 12481), (212, 12502),

Gene: Daob_17 Start: 10378, Stop: 12513, Start Num: 2

Candidate Starts for Daob_17:

(Start: 2 @10378 has 21 MA's), (5, 10411), (6, 10417), (8, 10429), (15, 10534), (29, 10699), (31, 10720), (43, 10834), (49, 10897), (55, 10939), (58, 10960), (59, 10981), (68, 11062), (69, 11065), (70, 11074), (71, 11086), (72, 11089), (78, 11206), (79, 11236), (82, 11278), (83, 11287), (96, 11404), (101, 11437), (105, 11464), (106, 11488), (109, 11500), (110, 11509), (111, 11518), (117, 11557), (121, 11593), (123, 11605), (125, 11617), (127, 11638), (130, 11665), (132, 11698), (134, 11713), (171, 11875), (173, 11899), (176, 11938), (179, 11974), (187, 12082), (189, 12136), (193, 12202), (194, 12223), (206, 12394), (208, 12427), (209, 12439), (211, 12484), (212, 12505),

Gene: Eesa_16 Start: 10396, Stop: 12624, Start Num: 2

Candidate Starts for Eesa_16:

(Start: 2 @10396 has 21 MA's), (4, 10411), (5, 10432), (10, 10486), (11, 10561), (13, 10591), (17, 10612), (22, 10648), (29, 10774), (32, 10798), (33, 10807), (34, 10816), (40, 10888), (45, 10927), (47, 10963), (50, 10984), (54, 11005), (57, 11029), (61, 11083), (62, 11089), (63, 11095), (64, 11125), (65, 11134), (71, 11176), (74, 11230), (76, 11275), (87, 11413), (90, 11455), (93, 11485), (99, 11527), (103, 11557), (110, 11617), (112, 11629), (114, 11638), (116, 11659), (125, 11725), (130, 11773), (135, 11794), (141, 11809), (144, 11827), (154, 11887), (181, 12112), (194, 12331), (206, 12502), (210, 12559), (212, 12613),

Gene: Galaxy_16 Start: 10481, Stop: 12862, Start Num: 2

Candidate Starts for Galaxy_16:

(Start: 2 @10481 has 21 MA's), (5, 10517), (8, 10535), (14, 10667), (17, 10685), (26, 10790), (38, 10949), (39, 10958), (42, 10979), (44, 10997), (52, 11066), (60, 11141), (61, 11153), (66, 11207), (73, 11285), (79, 11408), (84, 11483), (89, 11537), (95, 11597), (96, 11600), (98, 11612), (100, 11627), (104, 11657), (112, 11714), (115, 11732), (117, 11750), (121, 11786), (129, 11843), (130, 11858), (131, 11879), (136, 11921), (137, 11936), (138, 11939), (139, 11951), (143, 11975), (148, 12011), (149, 12017), (150, 12026), (153, 12044), (158, 12077), (159, 12086), (161, 12110), (162, 12122), (163, 12140), (165, 12173), (170, 12242), (171, 12251), (172, 12254), (173, 12275), (180, 12371), (187, 12458), (188, 12500), (189, 12512), (194, 12599), (196, 12662), (197, 12674), (207, 12794),

Gene: HannahPhantana_17 Start: 10378, Stop: 12513, Start Num: 2

Candidate Starts for HannahPhantana_17:

(Start: 2 @10378 has 21 MA's), (5, 10411), (6, 10417), (8, 10429), (15, 10534), (20, 10567), (29, 10699), (31, 10720), (43, 10834), (49, 10897), (55, 10939), (58, 10960), (59, 10981), (68, 11062), (69, 11065), (70, 11074), (71, 11086), (72, 11089), (78, 11206), (79, 11236), (82, 11278), (83, 11287), (96, 11404), (101, 11437), (105, 11464), (106, 11488), (109, 11500), (110, 11509), (111, 11518), (117, 11557), (121, 11593), (123, 11605), (125, 11617), (127, 11638), (130, 11665), (132, 11698), (134, 11713), (171, 11875), (173, 11899), (176, 11938), (179, 11974), (187, 12082), (189, 12136), (193, 12202), (194, 12223), (206, 12394), (208, 12427), (209, 12439), (211, 12484), (212, 12505),

Gene: Jamun_16 Start: 10816, Stop: 13221, Start Num: 2

Candidate Starts for Jamun_16:

(Start: 2 @10816 has 21 MA's), (5, 10852), (8, 10870), (10, 10906), (11, 10981), (18, 11026), (25, 11113), (26, 11125), (38, 11284), (39, 11293), (46, 11344), (52, 11401), (53, 11407), (61, 11488), (66, 11542), (72, 11581), (73, 11620), (84, 11818), (89, 11872), (95, 11932), (96, 11935), (100, 11962), (111, 12046), (117, 12085), (119, 12103), (121, 12121), (128, 12169), (131, 12214), (138, 12274), (139, 12286), (142, 12307), (143, 12310), (145, 12328), (147, 12343), (148, 12346), (149, 12352), (150, 12361), (151, 12373), (153, 12379), (155, 12394), (157, 12403), (159, 12421), (161, 12445), (162, 12457), (163, 12475), (165, 12508), (170, 12577), (171, 12586), (172, 12589), (173, 12610), (175, 12646), (180, 12706), (182, 12724), (194, 12934), (201, 13042), (206, 13099), (210, 13156),

Gene: Juno112_15 Start: 9789, Stop: 12077, Start Num: 2

Candidate Starts for Juno112_15:

(Start: 2 @9789 has 21 MA's), (4, 9801), (5, 9822), (7, 9831), (8, 9840), (12, 9942), (19, 9984), (29, 10122), (35, 10176), (36, 10206), (47, 10308), (49, 10320), (51, 10338), (55, 10362), (58, 10383), (59, 10404), (68, 10485), (69, 10488), (70, 10497), (71, 10509), (78, 10629), (79, 10659), (82, 10701), (96, 10827), (100, 10851), (103, 10872), (108, 10920), (110, 10932), (112, 10944), (114, 10953), (117, 10980), (121, 11016), (123, 11028), (124, 11031), (125, 11040), (130, 11088), (131, 11109), (152, 11274), (170, 11421), (171, 11430), (176, 11493), (182, 11568), (189, 11691), (191, 11751), (193, 11757), (194, 11778), (197, 11853), (212, 12069),

Gene: KHumphrey_15 Start: 9786, Stop: 12074, Start Num: 2

Candidate Starts for KHumphrey_15:

(Start: 2 @9786 has 21 MA's), (4, 9798), (5, 9819), (7, 9828), (8, 9837), (12, 9939), (19, 9981), (29, 10119), (35, 10173), (36, 10203), (47, 10305), (49, 10317), (51, 10335), (55, 10359), (58, 10380), (59, 10401), (68, 10482), (69, 10485), (70, 10494), (71, 10506), (78, 10626), (79, 10656), (82, 10698), (96, 10824), (100, 10848), (103, 10869), (108, 10917), (110, 10929), (112, 10941), (114, 10950), (117, 10977), (121, 11013), (123, 11025), (124, 11028), (125, 11037), (130, 11085), (131, 11106), (152, 11271), (170, 11418), (171, 11427), (176, 11490), (177, 11502), (182, 11565), (189, 11688), (191, 11748), (193, 11754), (194, 11775), (197, 11850), (212, 12066),

Gene: Kepler_16 Start: 10213, Stop: 12348, Start Num: 2

Candidate Starts for Kepler_16:

(Start: 2 @10213 has 21 MA's), (5, 10246), (6, 10252), (8, 10264), (15, 10369), (29, 10534), (31, 10555), (43, 10669), (49, 10732), (55, 10774), (58, 10795), (59, 10816), (68, 10897), (69, 10900), (70, 10909), (71, 10921), (72, 10924), (78, 11041), (79, 11071), (82, 11113), (83, 11122), (96, 11239), (101, 11272), (105, 11299), (106, 11323), (109, 11335), (110, 11344), (111, 11353), (117, 11392), (121, 11428), (123, 11440), (125, 11452), (127, 11473), (130, 11500), (132, 11533), (134, 11548), (171, 11710), (173, 11734), (176, 11773), (179, 11809), (187, 11917), (189, 11971), (193, 12037), (194, 12058), (206, 12229), (208, 12262), (209, 12274), (211, 12319), (212, 12340),

Gene: Kuleana_16 Start: 10172, Stop: 12535, Start Num: 3

Candidate Starts for Kuleana_16:

(Start: 3 @10172 has 2 MA's), (5, 10205), (11, 10334), (17, 10385), (24, 10460), (29, 10547), (32, 10571), (34, 10589), (41, 10667), (47, 10736), (48, 10742), (50, 10757), (57, 10802), (61, 10856), (62, 10862), (63, 10868), (64, 10898), (65, 10907), (71, 10949), (74, 11003), (76, 11048), (77, 11069), (85, 11174), (86, 11177), (87, 11186), (91, 11240), (93, 11258), (96, 11285), (99, 11300), (103, 11330), (108, 11378), (110, 11390), (117, 11438), (125, 11498), (126, 11507), (130, 11546), (132, 11579), (133, 11582), (134, 11594), (135, 11600), (152, 11732), (166, 11858), (176, 11951), (183, 12041), (190, 12203), (194, 12236), (195, 12269), (199, 12338), (200, 12344), (206, 12413), (211, 12503), (212, 12524),

Gene: Leona_15 Start: 9839, Stop: 12127, Start Num: 2

Candidate Starts for Leona_15:

(Start: 2 @9839 has 21 MA's), (4, 9851), (5, 9872), (7, 9881), (8, 9890), (12, 9992), (19, 10034), (29, 10172), (35, 10226), (36, 10256), (49, 10370), (51, 10388), (55, 10412), (58, 10433), (59, 10454), (68, 10535), (69, 10538), (70, 10547), (71, 10559), (78, 10679), (79, 10709), (82, 10751), (96, 10877), (100, 10901), (103, 10922), (112, 10994), (117, 11030), (121, 11066), (123, 11078), (125, 11090), (127, 11111), (130, 11138), (131, 11159), (152, 11324), (170, 11471), (171, 11480), (176, 11543), (177, 11555), (182, 11618), (189, 11741), (191, 11801), (193, 11807), (194, 11828), (197, 11903), (212, 12119),

Gene: LittleTokyo_16 Start: 10123, Stop: 12486, Start Num: 1

Candidate Starts for LittleTokyo_16:

(Start: 1 @10123 has 1 MA's), (4, 10138), (5, 10159), (7, 10168), (16, 10336), (19, 10351), (24, 10414), (27, 10453), (28, 10492), (29, 10501), (30, 10513), (32, 10525), (33, 10534), (34, 10543), (41, 10621), (45, 10654), (47, 10690), (50, 10711), (56, 10753), (57, 10756), (61, 10810), (62, 10816), (63, 10822), (64, 10852), (65, 10861), (71, 10903), (74, 10957), (76, 11002), (85, 11128), (87, 11140), (90, 11182), (93, 11212), (94, 11227), (96, 11239), (102, 11275), (107, 11326), (110, 11344), (113, 11362), (115, 11374), (120, 11413), (121, 11428), (122, 11437), (124, 11443), (125, 11452), (130, 11500), (132, 11533), (133, 11536), (152, 11686), (166, 11812), (171, 11842), (173, 11866), (176, 11905), (182, 11980), (185, 12025), (188, 12091), (190, 12157), (193, 12169), (194, 12190), (195, 12223), (196, 12253), (199, 12292), (200, 12298), (208, 12397), (211, 12454), (212, 12475),

Gene: Lunar_17 Start: 10375, Stop: 12510, Start Num: 2

Candidate Starts for Lunar_17:

(Start: 2 @10375 has 21 MA's), (5, 10408), (6, 10414), (8, 10426), (15, 10531), (29, 10696), (31, 10717), (43, 10831), (49, 10894), (55, 10936), (58, 10957), (59, 10978), (68, 11059), (69, 11062), (70, 11071), (71, 11083), (72, 11086), (78, 11203), (79, 11233), (82, 11275), (83, 11284), (96, 11401), (101, 11434), (105, 11461), (106, 11485), (109, 11497), (110, 11506), (111, 11515), (117, 11554), (121, 11590), (123, 11602), (125, 11614), (127, 11635), (130, 11662), (132, 11695), (134, 11710), (171, 11872), (173, 11896), (176, 11935), (179, 11971), (187, 12079), (189, 12133), (193, 12199), (194, 12220), (206, 12391), (208, 12424), (209, 12436), (211, 12481), (212, 12502),

Gene: Melons_17 Start: 10375, Stop: 12510, Start Num: 2

Candidate Starts for Melons_17:

(Start: 2 @10375 has 21 MA's), (5, 10408), (6, 10414), (8, 10426), (15, 10531), (29, 10696), (31, 10717), (43, 10831), (49, 10894), (55, 10936), (58, 10957), (59, 10978), (68, 11059), (69, 11062), (70, 11071), (71, 11083), (72, 11086), (78, 11203), (79, 11233), (82, 11275), (83, 11284), (96, 11401), (101, 11434), (105, 11461), (106, 11485), (109, 11497), (110, 11506), (111, 11515), (117, 11554), (121, 11590), (123, 11602), (125, 11614), (127, 11635), (130, 11662), (132, 11695), (134, 11710), (171, 11872), (173, 11896), (176, 11935), (179, 11971), (187, 12079), (189, 12133), (193, 12199), (194, 12220), (206, 12391), (208, 12424), (209, 12436), (211, 12481), (212, 12502),

Gene: Orcanus_16 Start: 10174, Stop: 12324, Start Num: 2

Candidate Starts for Orcanus_16:

(Start: 2 @10174 has 21 MA's), (5, 10210), (8, 10228), (9, 10249), (19, 10369), (23, 10420), (33, 10540), (35, 10561), (42, 10636), (49, 10705), (51, 10723), (55, 10747), (59, 10789), (68, 10870), (69, 10873), (70, 10882), (71, 10894), (78, 11014), (82, 11086), (94, 11200), (96, 11212), (102, 11248), (111, 11326), (113, 11335), (125, 11425), (130, 11473), (131, 11494), (135, 11527), (160, 11587), (167, 11656), (169, 11671), (181, 11812), (189, 11944), (190, 11998), (191, 12004), (192, 12007), (194, 12031), (198, 12118), (206, 12202), (210, 12259), (212, 12313),

Gene: PhluffyCoco_15 Start: 9788, Stop: 12076, Start Num: 2

Candidate Starts for PhluffyCoco_15:

(Start: 2 @9788 has 21 MA's), (4, 9800), (5, 9821), (7, 9830), (8, 9839), (12, 9941), (19, 9983), (29, 10121), (35, 10175), (36, 10205), (47, 10307), (49, 10319), (51, 10337), (55, 10361), (58, 10382), (59, 10403), (68, 10484), (69, 10487), (70, 10496), (71, 10508), (78, 10628), (79, 10658), (82, 10700), (96, 10826), (100, 10850), (103, 10871), (108, 10919), (110, 10931), (112, 10943), (114, 10952), (117, 10979), (121, 11015), (123, 11027), (124, 11030), (125, 11039), (130, 11087), (131, 11108), (152, 11273), (170, 11420), (171, 11429), (176, 11492), (177, 11504), (182, 11567), (186, 11615), (189, 11690), (191, 11750), (193, 11756), (194, 11777), (197, 11852), (212, 12068),

Gene: Polka_16 Start: 10214, Stop: 12352, Start Num: 2

Candidate Starts for Polka_16:

(Start: 2 @10214 has 21 MA's), (5, 10250), (6, 10256), (8, 10268), (15, 10373), (29, 10538), (31, 10559), (43, 10673), (49, 10736), (55, 10778), (58, 10799), (59, 10820), (68, 10901), (69, 10904), (70, 10913), (71, 10925), (72, 10928), (78, 11045), (79, 11075), (82, 11117), (83, 11126), (96, 11243), (101, 11276), (105, 11303), (106, 11327), (109, 11339), (110, 11348), (111, 11357), (117, 11396), (121, 11432), (123, 11444), (125, 11456), (127, 11477), (130, 11504), (132, 11537), (134, 11552), (171, 11714), (173, 11738), (176, 11777), (179, 11813), (187, 11921), (189, 11975), (193, 12041), (194, 12062), (206, 12233), (208, 12266), (209, 12278), (211, 12323), (212, 12344),

Gene: RedFox_15 Start: 9788, Stop: 12076, Start Num: 2

Candidate Starts for RedFox_15:

(Start: 2 @9788 has 21 MA's), (4, 9800), (5, 9821), (7, 9830), (8, 9839), (12, 9941), (19, 9983), (29, 10121), (35, 10175), (36, 10205), (47, 10307), (49, 10319), (51, 10337), (55, 10361), (58, 10382), (59, 10403), (68, 10484), (69, 10487), (70, 10496), (71, 10508), (78, 10628), (79, 10658), (82, 10700), (96, 10826), (100, 10850), (103, 10871), (108, 10919), (110, 10931), (112, 10943), (114, 10952), (117, 10979), (121, 11015), (123, 11027), (124, 11030), (125, 11039), (130, 11087), (131, 11108), (152, 11273), (170, 11420), (171, 11429), (176, 11492), (182, 11567), (189, 11690), (191, 11750), (193, 11756), (194, 11777), (197, 11852), (212, 12068),

Gene: Renna12_16 Start: 9997, Stop: 12417, Start Num: 2

Candidate Starts for Renna12_16:

(Start: 2 @9997 has 21 MA's), (4, 10009), (5, 10030), (7, 10039), (8, 10048), (12, 10150), (19, 10192), (29, 10330), (35, 10384), (36, 10414), (49, 10528), (51, 10546), (55, 10570), (58, 10591), (59, 10612), (68, 10693), (69, 10696), (70, 10705), (71, 10717), (79, 10867), (82, 10909), (96, 11035), (100,

11059), (102, 11071), (103, 11080), (108, 11128), (112, 11152), (114, 11161), (117, 11188), (121, 11224), (123, 11236), (130, 11296), (140, 11395), (164, 11614), (176, 11833), (182, 11908), (193, 12097), (194, 12118), (197, 12193), (206, 12298), (212, 12409),

Gene: Ruchi_16 Start: 10744, Stop: 13149, Start Num: 2

Candidate Starts for Ruchi_16:

(Start: 2 @10744 has 21 MA's), (5, 10780), (8, 10798), (10, 10834), (11, 10909), (18, 10954), (25, 11041), (26, 11053), (38, 11212), (39, 11221), (52, 11329), (53, 11335), (61, 11416), (66, 11470), (72, 11509), (81, 11710), (84, 11746), (89, 11800), (95, 11860), (96, 11863), (100, 11890), (104, 11920), (111, 11974), (117, 12013), (119, 12031), (121, 12049), (128, 12097), (131, 12142), (138, 12202), (139, 12214), (142, 12235), (143, 12238), (145, 12256), (147, 12271), (148, 12274), (149, 12280), (150, 12289), (151, 12301), (153, 12307), (155, 12322), (157, 12331), (161, 12373), (162, 12385), (163, 12403), (165, 12436), (170, 12505), (171, 12514), (172, 12517), (173, 12538), (175, 12574), (180, 12634), (182, 12652), (194, 12862), (206, 13027), (210, 13084),

Gene: TaylorSipt_16 Start: 10274, Stop: 12499, Start Num: 2

Candidate Starts for TaylorSipt_16:

(Start: 2 @10274 has 21 MA's), (4, 10289), (5, 10310), (13, 10469), (22, 10526), (24, 10565), (29, 10652), (30, 10664), (32, 10676), (33, 10685), (34, 10694), (37, 10742), (40, 10766), (41, 10772), (47, 10841), (50, 10862), (56, 10904), (57, 10907), (61, 10961), (62, 10967), (63, 10973), (64, 11003), (65, 11012), (71, 11054), (74, 11108), (76, 11153), (87, 11291), (90, 11333), (93, 11363), (99, 11405), (103, 11435), (112, 11507), (114, 11516), (116, 11537), (124, 11594), (125, 11603), (130, 11651), (135, 11672), (144, 11705), (154, 11765), (156, 11771), (166, 11831), (168, 11846), (177, 11936), (178, 11945), (180, 11981), (188, 12110), (189, 12122), (194, 12209), (198, 12296), (199, 12311), (203, 12353), (206, 12380), (210, 12437), (212, 12491),

Gene: Vulpecula_16 Start: 10814, Stop: 13219, Start Num: 2

Candidate Starts for Vulpecula_16:

(Start: 2 @10814 has 21 MA's), (5, 10850), (8, 10868), (10, 10904), (11, 10979), (18, 11024), (25, 11111), (26, 11123), (38, 11282), (39, 11291), (46, 11342), (52, 11399), (53, 11405), (61, 11486), (66, 11540), (72, 11579), (84, 11816), (89, 11870), (95, 11930), (96, 11933), (100, 11960), (104, 11990), (117, 12083), (119, 12101), (121, 12119), (131, 12212), (138, 12272), (139, 12284), (142, 12305), (143, 12308), (145, 12326), (147, 12341), (148, 12344), (149, 12350), (150, 12359), (151, 12371), (153, 12377), (155, 12392), (157, 12401), (159, 12419), (161, 12443), (162, 12455), (163, 12473), (165, 12506), (171, 12584), (172, 12587), (173, 12608), (174, 12626), (175, 12644), (180, 12704), (182, 12722), (194, 12932), (201, 13040), (206, 13097), (210, 13154),