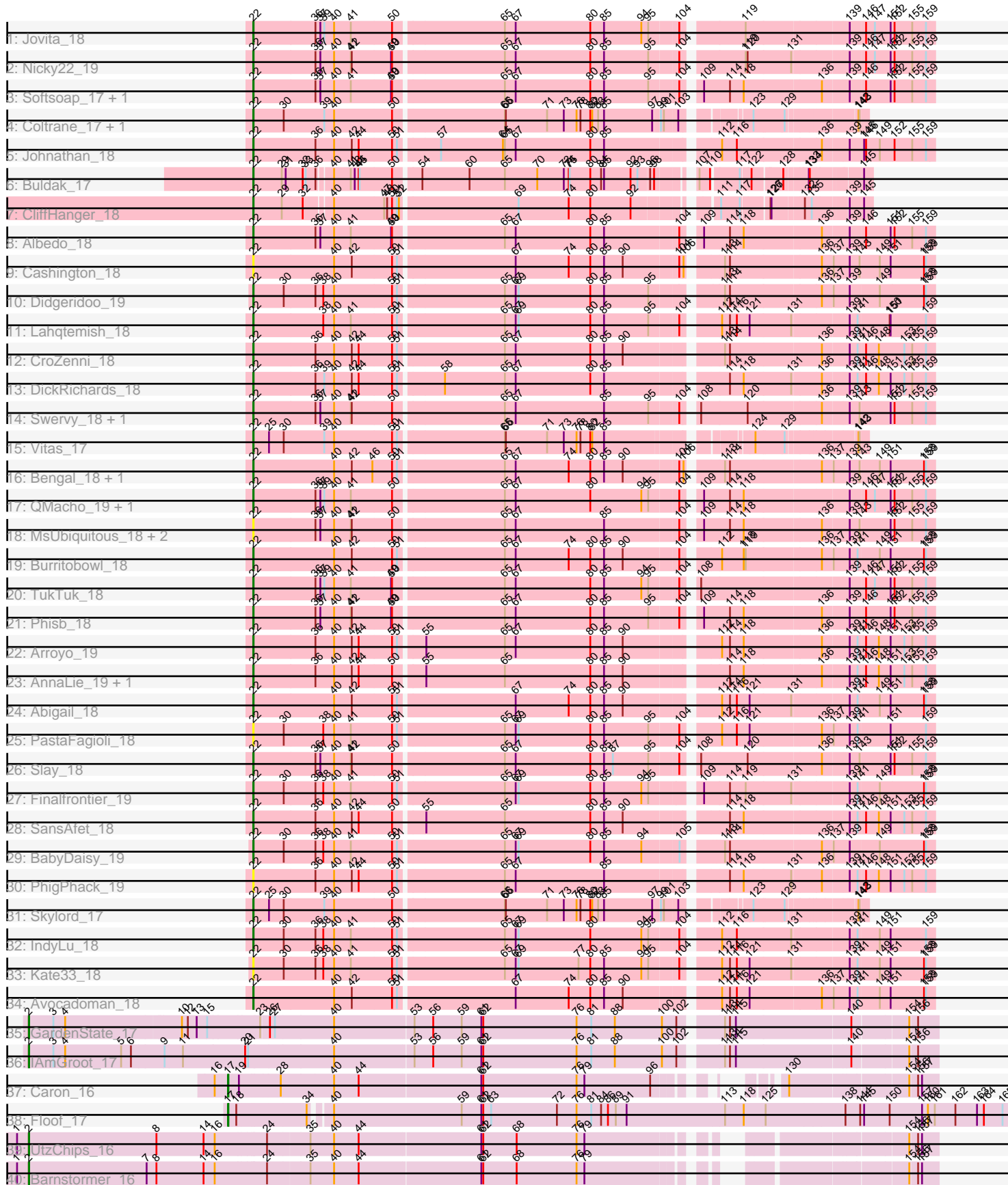


Pham 216266



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 216266 Report

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

Pham number 216266 has 48 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Jovita_18
- Track 2 : Nicky22_19
- Track 3 : Softsoap_17, BubbaBear_18
- Track 4 : Coltrane_17, Brahms_17
- Track 5 : Johnathan_18
- Track 6 : Buldak_17
- Track 7 : CliffHanger_18
- Track 8 : Albedo_18
- Track 9 : Cashington_18
- Track 10 : Didgeridoo_19
- Track 11 : Lahqtemish_18
- Track 12 : CroZenni_18
- Track 13 : DickRichards_18
- Track 14 : Swervy_18, SarBear_18
- Track 15 : Vitas_17
- Track 16 : Bengal_18, LimaBean_18
- Track 17 : QMacho_19, Eula_18
- Track 18 : MsUbiquitous_18, Jabb_18, CupcakePrincess_18
- Track 19 : Burritobowl_18
- Track 20 : TukTuk_18
- Track 21 : Phisb_18
- Track 22 : Arroyo_19
- Track 23 : AnnaLie_19, BelmontSKP_19
- Track 24 : Abigail_18
- Track 25 : PastaFagioli_18
- Track 26 : Slay_18
- Track 27 : Finalfrontier_19
- Track 28 : SansAfet_18
- Track 29 : BabyDaisy_19
- Track 30 : PhigPhack_19
- Track 31 : Skylord_17
- Track 32 : IndyLu_18
- Track 33 : Kate33_18
- Track 34 : Avocadoman_18
- Track 35 : GardenState_17
- Track 36 : IAmGroot_17
- Track 37 : Caron_16

- Track 38 : Floof_17
- Track 39 : UtzChips_16
- Track 40 : Barnstormer_16

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

The start number called the most often in the published annotations is 22, it was called in 33 of the 39 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abigail_18, Albedo_18, AnnaLie_19, Arroyo_19, Avocadoman_18, BabyDaisy_19, BelmontSKP_19, Bengal_18, Brahms_17, BubbaBear_18, Buldak_17, Burritobowl_18, Cashington_18, CliffHanger_18, Coltrane_17, CroZenni_18, CupcakePrincess_18, DickRichards_18, Didgeridoo_19, Eula_18, Finalfrontier_19, IndyLu_18, Jabb_18, Johnathan_18, Jovita_18, Kate33_18, Lahqtemish_18, LimaBean_18, MsUbiquitous_18, Nicky22_19, PastaFagioli_18, PhigPhack_19, Phisb_18, QMacho_19, SansAfet_18, SarBear_18, Skylord_17, Slay_18, Softsoap_17, Swervy_18, TukTuk_18, Vitas_17,

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

-

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

- Barnstormer_16, Caron_16, Floof_17, GardenState_17, IAmGroot_17, UtzChips_16,

Summary by start number:

Start 2:

- Found in 4 of 48 (8.3%) of genes in pham
- Manual Annotations of this start: 4 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barnstormer_16 (EH), GardenState_17 (EH), IAmGroot_17 (EH), UtzChips_16 (EH),

Start 17:

- Found in 2 of 48 (4.2%) of genes in pham
- Manual Annotations of this start: 2 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Caron_16 (EH), Floof_17 (EH),

Start 22:

- Found in 42 of 48 (87.5%) of genes in pham
- Manual Annotations of this start: 33 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abigail_18 (EB), Albedo_18 (EB), AnnaLie_19 (EB), Arroyo_19 (EB), Avocadoman_18 (EB), BabyDaisy_19 (EB), BelmontSKP_19 (EB), Bengal_18 (EB), Brahms_17 (EB), BubbaBear_18 (EB), Buldak_17 (EB), Burritobowl_18 (EB), Cashington_18 (EB), CliffHanger_18 (EB), Coltrane_17 (EB), CroZenni_18 (EB), CupcakePrincess_18 (EB), DickRichards_18

(EB), Didgeridoo_19 (EB), Eula_18 (EB), Finalfrontier_19 (EB), IndyLu_18 (EB), Jabb_18 (EB), Johnathan_18 (EB), Jovita_18 (EB), Kate33_18 (EB), Lahqtemish_18 (EB), LimaBean_18 (EB), MsUbiquitous_18 (EB), Nicky22_19 (EB), PastaFagioli_18 (EB), PhigPhack_19 (EB), Phisb_18 (EB), QMacho_19 (EB), SansAfet_18 (EB), SarBear_18 (EB), Skylord_17 (EB), Slay_18 (EB), Softsoap_17 (EB), Swervy_18 (EB), TukTuk_18 (EB), Vitas_17 (EB),

Summary by clusters:

There are 2 clusters represented in this pham: EH, EB,

Info for manual annotations of cluster EB:

- Start number 22 was manually annotated 33 times for cluster EB.

Info for manual annotations of cluster EH:

- Start number 2 was manually annotated 4 times for cluster EH.
- Start number 17 was manually annotated 2 times for cluster EH.

Gene Information:

Gene: Abigail_18 Start: 14117, Stop: 16090, Start Num: 22

Candidate Starts for Abigail_18:

(Start: 22 @14117 has 33 MA's), (40, 14363), (42, 14417), (50, 14537), (51, 14549), (67, 14888), (74, 15050), (80, 15116), (85, 15158), (90, 15215), (112, 15470), (114, 15494), (116, 15515), (121, 15554), (131, 15680), (139, 15839), (141, 15863), (149, 15926), (151, 15959), (158, 16058), (159, 16064),

Gene: Albedo_18 Start: 13985, Stop: 15955, Start Num: 22

Candidate Starts for Albedo_18:

(Start: 22 @13985 has 33 MA's), (36, 14174), (37, 14189), (40, 14231), (41, 14282), (49, 14402), (50, 14405), (65, 14723), (67, 14756), (80, 14984), (85, 15026), (104, 15245), (109, 15284), (114, 15359), (118, 15401), (136, 15629), (139, 15704), (146, 15749), (151, 15824), (152, 15833), (155, 15887), (159, 15929),

Gene: AnnaLie_19 Start: 14304, Stop: 16274, Start Num: 22

Candidate Starts for AnnaLie_19:

(Start: 22 @14304 has 33 MA's), (36, 14493), (40, 14550), (42, 14604), (44, 14625), (50, 14724), (55, 14802), (65, 15042), (80, 15303), (85, 15345), (90, 15402), (114, 15678), (118, 15720), (136, 15948), (139, 16023), (141, 16047), (146, 16068), (148, 16107), (151, 16143), (153, 16182), (155, 16206), (159, 16248),

Gene: Arroyo_19 Start: 14505, Stop: 16475, Start Num: 22

Candidate Starts for Arroyo_19:

(Start: 22 @14505 has 33 MA's), (36, 14694), (40, 14751), (42, 14805), (44, 14826), (50, 14925), (51, 14937), (55, 15003), (65, 15243), (67, 15276), (80, 15504), (85, 15546), (90, 15603), (112, 15855), (114, 15879), (118, 15921), (136, 16149), (139, 16224), (141, 16248), (146, 16269), (148, 16308), (151, 16344), (153, 16383), (155, 16407), (159, 16449),

Gene: Avocadoman_18 Start: 14060, Stop: 16033, Start Num: 22

Candidate Starts for Avocadoman_18:

(Start: 22 @14060 has 33 MA's), (40, 14306), (42, 14360), (50, 14480), (51, 14492), (67, 14831), (74, 14993), (80, 15059), (85, 15101), (90, 15158), (112, 15413), (114, 15437), (116, 15458), (121, 15497),

(136, 15707), (137, 15737), (139, 15782), (141, 15806), (149, 15869), (151, 15902), (158, 16001), (159, 16007),

Gene: BabyDaisy_19 Start: 14120, Stop: 16090, Start Num: 22

Candidate Starts for BabyDaisy_19:

(Start: 22 @14120 has 33 MA's), (30, 14213), (36, 14309), (38, 14333), (40, 14366), (41, 14417), (50, 14540), (51, 14552), (65, 14858), (67, 14891), (69, 14900), (80, 15119), (85, 15161), (94, 15275), (105, 15380), (113, 15479), (114, 15494), (136, 15764), (137, 15794), (139, 15839), (149, 15926), (158, 16058), (159, 16064),

Gene: Barnstormer_16 Start: 13150, Stop: 15660, Start Num: 2

Candidate Starts for Barnstormer_16:

(1, 13114), (Start: 2 @13150 has 4 MA's), (7, 13510), (8, 13540), (14, 13684), (16, 13717), (24, 13867), (35, 13990), (40, 14062), (44, 14137), (61, 14500), (62, 14506), (68, 14608), (76, 14791), (79, 14815), (154, 15577), (156, 15598), (157, 15610),

Gene: BelmontSKP_19 Start: 14304, Stop: 16274, Start Num: 22

Candidate Starts for BelmontSKP_19:

(Start: 22 @14304 has 33 MA's), (36, 14493), (40, 14550), (42, 14604), (44, 14625), (50, 14724), (55, 14802), (65, 15042), (80, 15303), (85, 15345), (90, 15402), (114, 15678), (118, 15720), (136, 15948), (139, 16023), (141, 16047), (146, 16068), (148, 16107), (151, 16143), (153, 16182), (155, 16206), (159, 16248),

Gene: Bengal_18 Start: 13895, Stop: 15865, Start Num: 22

Candidate Starts for Bengal_18:

(Start: 22 @13895 has 33 MA's), (40, 14141), (42, 14195), (46, 14258), (50, 14315), (51, 14327), (65, 14633), (67, 14666), (74, 14828), (80, 14894), (85, 14936), (90, 14993), (104, 15155), (106, 15167), (113, 15254), (114, 15269), (136, 15539), (137, 15569), (139, 15614), (143, 15644), (149, 15701), (151, 15734), (158, 15833), (159, 15839),

Gene: Brahms_17 Start: 12466, Stop: 14169, Start Num: 22

Candidate Starts for Brahms_17:

(Start: 22 @12466 has 33 MA's), (30, 12559), (39, 12682), (40, 12712), (50, 12886), (65, 13204), (66, 13207), (71, 13333), (73, 13384), (76, 13423), (78, 13435), (80, 13465), (82, 13471), (83, 13489), (85, 13507), (97, 13654), (99, 13669), (101, 13678), (103, 13717), (123, 13873), (129, 13963), (142, 14143), (143, 14146),

Gene: BubbaBear_18 Start: 13985, Stop: 15955, Start Num: 22

Candidate Starts for BubbaBear_18:

(Start: 22 @13985 has 33 MA's), (36, 14174), (37, 14189), (40, 14231), (41, 14282), (49, 14402), (50, 14405), (65, 14723), (67, 14756), (80, 14984), (85, 15026), (95, 15161), (104, 15245), (109, 15284), (114, 15359), (118, 15401), (136, 15629), (139, 15704), (146, 15749), (151, 15824), (152, 15833), (155, 15887), (159, 15929),

Gene: Buldak_17 Start: 13900, Stop: 15591, Start Num: 22

Candidate Starts for Buldak_17:

(Start: 22 @13900 has 33 MA's), (29, 13987), (31, 13999), (32, 14050), (33, 14059), (36, 14089), (40, 14128), (41, 14179), (43, 14191), (44, 14203), (45, 14206), (50, 14302), (54, 14371), (60, 14512), (65, 14620), (70, 14719), (73, 14800), (74, 14815), (75, 14818), (80, 14881), (84, 14914), (85, 14923), (92, 15004), (93, 15025), (96, 15058), (98, 15070), (107, 15151), (110, 15181), (117, 15256), (122, 15283), (128, 15367), (133, 15430), (134, 15433), (145, 15565),

Gene: Burritobowl_18 Start: 14063, Stop: 16033, Start Num: 22

Candidate Starts for Burritobowl_18:

(Start: 22 @14063 has 33 MA's), (40, 14309), (42, 14363), (50, 14483), (51, 14495), (65, 14801), (67, 14834), (74, 14996), (80, 15062), (85, 15104), (90, 15161), (104, 15323), (112, 15413), (118, 15479), (119, 15485), (136, 15707), (137, 15737), (139, 15782), (141, 15806), (149, 15869), (151, 15902), (158, 16001), (159, 16007),

Gene: Caron_16 Start: 13192, Stop: 15042, Start Num: 17

Candidate Starts for Caron_16:

(16, 13156), (Start: 17 @13192 has 2 MA's), (19, 13219), (28, 13339), (40, 13495), (44, 13570), (61, 13933), (62, 13939), (76, 14224), (79, 14248), (96, 14449), (130, 14623), (154, 14959), (156, 14980), (157, 14992),

Gene: Cashington_18 Start: 13912, Stop: 15882, Start Num: 22

Candidate Starts for Cashington_18:

(Start: 22 @13912 has 33 MA's), (40, 14158), (42, 14212), (50, 14332), (51, 14344), (67, 14683), (74, 14845), (80, 14911), (85, 14953), (90, 15010), (104, 15172), (106, 15184), (113, 15271), (114, 15286), (136, 15556), (137, 15586), (139, 15631), (143, 15661), (149, 15718), (151, 15751), (158, 15850), (159, 15856),

Gene: CliffHanger_18 Start: 13501, Stop: 15195, Start Num: 22

Candidate Starts for CliffHanger_18:

(Start: 22 @13501 has 33 MA's), (29, 13588), (32, 13651), (40, 13729), (47, 13879), (48, 13888), (50, 13903), (51, 13915), (52, 13921), (69, 14263), (74, 14416), (80, 14482), (92, 14605), (111, 14800), (117, 14857), (126, 14929), (127, 14932), (132, 15019), (135, 15040), (139, 15130), (145, 15169),

Gene: Coltrane_17 Start: 12466, Stop: 14169, Start Num: 22

Candidate Starts for Coltrane_17:

(Start: 22 @12466 has 33 MA's), (30, 12559), (39, 12682), (40, 12712), (50, 12886), (65, 13204), (66, 13207), (71, 13333), (73, 13384), (76, 13423), (78, 13435), (80, 13465), (82, 13471), (83, 13489), (85, 13507), (97, 13654), (99, 13669), (101, 13678), (103, 13717), (123, 13873), (129, 13963), (142, 14143), (143, 14146),

Gene: CroZenni_18 Start: 13895, Stop: 15865, Start Num: 22

Candidate Starts for CroZenni_18:

(Start: 22 @13895 has 33 MA's), (36, 14084), (40, 14141), (42, 14195), (44, 14216), (50, 14315), (51, 14327), (65, 14633), (67, 14666), (80, 14894), (85, 14936), (90, 14993), (113, 15254), (114, 15269), (136, 15539), (139, 15614), (141, 15638), (146, 15659), (148, 15698), (153, 15773), (155, 15797), (159, 15839),

Gene: CupcakePrincess_18 Start: 14012, Stop: 15982, Start Num: 22

Candidate Starts for CupcakePrincess_18:

(Start: 22 @14012 has 33 MA's), (36, 14201), (37, 14216), (40, 14258), (41, 14309), (42, 14312), (50, 14432), (65, 14750), (67, 14783), (85, 15053), (104, 15272), (109, 15311), (114, 15386), (118, 15428), (136, 15656), (139, 15731), (143, 15761), (151, 15851), (152, 15860), (155, 15914), (159, 15956),

Gene: DickRichards_18 Start: 14390, Stop: 16360, Start Num: 22

Candidate Starts for DickRichards_18:

(Start: 22 @14390 has 33 MA's), (36, 14579), (39, 14606), (40, 14636), (42, 14690), (44, 14711), (50, 14810), (51, 14822), (58, 14945), (65, 15128), (67, 15161), (80, 15389), (85, 15431), (114, 15764), (118, 15806), (131, 15950), (136, 16034), (139, 16109), (141, 16133), (146, 16154), (148, 16193), (151, 16229), (153, 16268), (155, 16292), (159, 16334),

Gene: Didgeridoo_19 Start: 14122, Stop: 16092, Start Num: 22

Candidate Starts for Didgeridoo_19:

(Start: 22 @14122 has 33 MA's), (30, 14215), (36, 14311), (38, 14335), (40, 14368), (50, 14542), (51, 14554), (65, 14860), (67, 14893), (69, 14902), (80, 15121), (85, 15163), (95, 15298), (113, 15481), (114, 15496), (136, 15766), (137, 15796), (139, 15841), (149, 15928), (158, 16060), (159, 16066),

Gene: Eula_18 Start: 13973, Stop: 15943, Start Num: 22

Candidate Starts for Eula_18:

(Start: 22 @13973 has 33 MA's), (36, 14162), (37, 14177), (39, 14189), (40, 14219), (41, 14270), (50, 14393), (65, 14711), (67, 14744), (80, 14972), (94, 15128), (95, 15149), (104, 15233), (109, 15272), (114, 15347), (118, 15389), (139, 15692), (146, 15737), (147, 15764), (151, 15812), (152, 15821), (155, 15875), (159, 15917),

Gene: Finalfrontier_19 Start: 14486, Stop: 16459, Start Num: 22

Candidate Starts for Finalfrontier_19:

(Start: 22 @14486 has 33 MA's), (30, 14579), (36, 14675), (38, 14699), (40, 14732), (41, 14783), (50, 14906), (51, 14918), (65, 15224), (67, 15257), (69, 15266), (80, 15485), (85, 15527), (94, 15641), (95, 15662), (109, 15785), (114, 15863), (119, 15911), (131, 16049), (139, 16208), (141, 16232), (149, 16295), (158, 16427), (159, 16433),

Gene: Floof_17 Start: 13331, Stop: 15664, Start Num: 17

Candidate Starts for Floof_17:

(Start: 17 @13331 has 2 MA's), (18, 13352), (34, 13553), (40, 13604), (59, 13994), (61, 14054), (62, 14060), (63, 14084), (72, 14285), (76, 14345), (81, 14390), (84, 14420), (86, 14441), (89, 14465), (91, 14498), (113, 14795), (118, 14852), (125, 14918), (138, 15158), (144, 15203), (145, 15215), (150, 15293), (157, 15392), (160, 15410), (161, 15431), (162, 15494), (163, 15560), (164, 15581), (165, 15638),

Gene: GardenState_17 Start: 13423, Stop: 16074, Start Num: 2

Candidate Starts for GardenState_17:

(Start: 2 @13423 has 4 MA's), (3, 13498), (4, 13534), (10, 13879), (12, 13897), (13, 13924), (15, 13954), (23, 14107), (26, 14128), (27, 14143), (40, 14320), (53, 14554), (56, 14611), (59, 14698), (61, 14758), (62, 14764), (76, 15049), (81, 15094), (88, 15166), (100, 15310), (102, 15349), (113, 15460), (114, 15475), (115, 15493), (140, 15832), (154, 15991), (156, 16012),

Gene: IAmGroot_17 Start: 14067, Stop: 16736, Start Num: 2

Candidate Starts for IAmGroot_17:

(Start: 2 @14067 has 4 MA's), (3, 14142), (4, 14178), (5, 14349), (6, 14379), (9, 14475), (11, 14529), (20, 14718), (21, 14727), (40, 14982), (53, 15216), (56, 15273), (59, 15360), (61, 15420), (62, 15426), (76, 15711), (81, 15756), (88, 15828), (100, 15972), (102, 16011), (113, 16122), (114, 16137), (115, 16155), (140, 16494), (154, 16653), (156, 16674),

Gene: IndyLu_18 Start: 13944, Stop: 15914, Start Num: 22

Candidate Starts for IndyLu_18:

(Start: 22 @13944 has 33 MA's), (30, 14037), (36, 14133), (38, 14157), (40, 14190), (41, 14241), (50, 14364), (51, 14376), (65, 14682), (67, 14715), (69, 14724), (80, 14943), (94, 15099), (95, 15120), (104, 15204), (112, 15294), (116, 15339), (131, 15504), (139, 15663), (141, 15687), (149, 15750), (151, 15783), (159, 15888),

Gene: Jabb_18 Start: 14012, Stop: 15982, Start Num: 22

Candidate Starts for Jabb_18:

(Start: 22 @14012 has 33 MA's), (36, 14201), (37, 14216), (40, 14258), (41, 14309), (42, 14312), (50, 14432), (65, 14750), (67, 14783), (85, 15053), (104, 15272), (109, 15311), (114, 15386), (118, 15428), (136, 15656), (139, 15731), (143, 15761), (151, 15851), (152, 15860), (155, 15914), (159, 15956),

Gene: Johnathan_18 Start: 13999, Stop: 15969, Start Num: 22

Candidate Starts for Johnathan_18:

(Start: 22 @13999 has 33 MA's), (36, 14188), (40, 14245), (42, 14299), (44, 14320), (50, 14419), (51, 14431), (57, 14542), (64, 14731), (65, 14737), (67, 14770), (80, 14998), (85, 15040), (112, 15349), (116, 15394), (136, 15643), (139, 15718), (145, 15757), (146, 15763), (149, 15805), (152, 15847), (155, 15901), (159, 15943),

Gene: Jovita_18 Start: 14074, Stop: 16047, Start Num: 22

Candidate Starts for Jovita_18:

(Start: 22 @14074 has 33 MA's), (36, 14263), (37, 14278), (39, 14290), (40, 14320), (41, 14371), (50, 14494), (65, 14812), (67, 14845), (80, 15073), (85, 15115), (94, 15229), (95, 15250), (104, 15334), (119, 15499), (139, 15796), (146, 15841), (147, 15868), (151, 15916), (152, 15925), (155, 15979), (159, 16021),

Gene: Kate33_18 Start: 13943, Stop: 15916, Start Num: 22

Candidate Starts for Kate33_18:

(Start: 22 @13943 has 33 MA's), (30, 14036), (36, 14132), (38, 14156), (40, 14189), (41, 14240), (50, 14363), (51, 14375), (65, 14681), (67, 14714), (69, 14723), (77, 14906), (80, 14942), (85, 14984), (94, 15098), (95, 15119), (104, 15203), (112, 15296), (114, 15320), (116, 15341), (121, 15380), (131, 15506), (139, 15665), (141, 15689), (149, 15752), (151, 15785), (158, 15884), (159, 15890),

Gene: Lahqtemish_18 Start: 13989, Stop: 15962, Start Num: 22

Candidate Starts for Lahqtemish_18:

(Start: 22 @13989 has 33 MA's), (38, 14202), (40, 14235), (41, 14286), (50, 14409), (51, 14421), (65, 14727), (67, 14760), (69, 14769), (80, 14988), (85, 15030), (95, 15165), (104, 15249), (112, 15342), (114, 15366), (116, 15387), (121, 15426), (131, 15552), (139, 15711), (141, 15735), (150, 15828), (151, 15831), (159, 15936),

Gene: LimaBean_18 Start: 13998, Stop: 15968, Start Num: 22

Candidate Starts for LimaBean_18:

(Start: 22 @13998 has 33 MA's), (40, 14244), (42, 14298), (46, 14361), (50, 14418), (51, 14430), (65, 14736), (67, 14769), (74, 14931), (80, 14997), (85, 15039), (90, 15096), (104, 15258), (106, 15270), (113, 15357), (114, 15372), (136, 15642), (137, 15672), (139, 15717), (143, 15747), (149, 15804), (151, 15837), (158, 15936), (159, 15942),

Gene: MsUbiquitous_18 Start: 14012, Stop: 15982, Start Num: 22

Candidate Starts for MsUbiquitous_18:

(Start: 22 @14012 has 33 MA's), (36, 14201), (37, 14216), (40, 14258), (41, 14309), (42, 14312), (50, 14432), (65, 14750), (67, 14783), (85, 15053), (104, 15272), (109, 15311), (114, 15386), (118, 15428), (136, 15656), (139, 15731), (143, 15761), (151, 15851), (152, 15860), (155, 15914), (159, 15956),

Gene: Nicky22_19 Start: 14417, Stop: 16390, Start Num: 22

Candidate Starts for Nicky22_19:

(Start: 22 @14417 has 33 MA's), (36, 14606), (37, 14621), (40, 14663), (41, 14714), (42, 14717), (49, 14834), (50, 14837), (65, 15155), (67, 15188), (80, 15416), (85, 15458), (95, 15593), (104, 15677), (119, 15842), (120, 15848), (131, 15980), (139, 16139), (146, 16184), (147, 16211), (151, 16259), (152, 16268), (155, 16322), (159, 16364),

Gene: PastaFagioli_18 Start: 13977, Stop: 15950, Start Num: 22

Candidate Starts for PastaFagioli_18:

(Start: 22 @13977 has 33 MA's), (30, 14070), (38, 14190), (40, 14223), (41, 14274), (50, 14397), (51, 14409), (65, 14715), (67, 14748), (69, 14757), (80, 14976), (85, 15018), (95, 15153), (104, 15237),

(112, 15330), (116, 15375), (121, 15414), (136, 15624), (137, 15654), (139, 15699), (141, 15723),
(151, 15819), (159, 15924),

Gene: PhigPhack_19 Start: 13972, Stop: 15942, Start Num: 22

Candidate Starts for PhigPhack_19:

(Start: 22 @13972 has 33 MA's), (36, 14161), (40, 14218), (42, 14272), (44, 14293), (50, 14392), (51, 14404), (65, 14710), (67, 14743), (85, 15013), (114, 15346), (118, 15388), (131, 15532), (136, 15616), (139, 15691), (141, 15715), (146, 15736), (148, 15775), (151, 15811), (153, 15850), (155, 15874), (159, 15916),

Gene: Phisb_18 Start: 13986, Stop: 15956, Start Num: 22

Candidate Starts for Phisb_18:

(Start: 22 @13986 has 33 MA's), (36, 14175), (37, 14190), (40, 14232), (41, 14283), (42, 14286), (49, 14403), (50, 14406), (65, 14724), (67, 14757), (80, 14985), (85, 15027), (95, 15162), (104, 15246), (109, 15285), (114, 15360), (118, 15402), (136, 15630), (139, 15705), (146, 15750), (151, 15825), (152, 15834), (155, 15888), (159, 15930),

Gene: QMacho_19 Start: 14456, Stop: 16426, Start Num: 22

Candidate Starts for QMacho_19:

(Start: 22 @14456 has 33 MA's), (36, 14645), (37, 14660), (39, 14672), (40, 14702), (41, 14753), (50, 14876), (65, 15194), (67, 15227), (80, 15455), (94, 15611), (95, 15632), (104, 15716), (109, 15755), (114, 15830), (118, 15872), (139, 16175), (146, 16220), (147, 16247), (151, 16295), (152, 16304), (155, 16358), (159, 16400),

Gene: SansAfet_18 Start: 13906, Stop: 15876, Start Num: 22

Candidate Starts for SansAfet_18:

(Start: 22 @13906 has 33 MA's), (36, 14095), (40, 14152), (42, 14206), (44, 14227), (50, 14326), (55, 14404), (65, 14644), (80, 14905), (85, 14947), (90, 15004), (114, 15280), (118, 15322), (139, 15625), (141, 15649), (146, 15670), (148, 15709), (151, 15745), (153, 15784), (155, 15808), (159, 15850),

Gene: SarBear_18 Start: 13951, Stop: 15924, Start Num: 22

Candidate Starts for SarBear_18:

(Start: 22 @13951 has 33 MA's), (36, 14140), (37, 14155), (40, 14197), (41, 14248), (42, 14251), (50, 14371), (65, 14689), (67, 14722), (85, 14992), (95, 15127), (104, 15211), (108, 15241), (120, 15382), (136, 15598), (139, 15673), (143, 15703), (151, 15793), (152, 15802), (155, 15856), (159, 15898),

Gene: Skylord_17 Start: 12466, Stop: 14169, Start Num: 22

Candidate Starts for Skylord_17:

(Start: 22 @12466 has 33 MA's), (25, 12514), (30, 12559), (39, 12682), (40, 12712), (50, 12886), (65, 13204), (66, 13207), (71, 13333), (73, 13384), (76, 13423), (78, 13435), (80, 13465), (82, 13471), (83, 13489), (85, 13507), (97, 13654), (99, 13669), (101, 13678), (103, 13717), (123, 13873), (129, 13963), (142, 14143), (143, 14146),

Gene: Slay_18 Start: 14493, Stop: 16466, Start Num: 22

Candidate Starts for Slay_18:

(Start: 22 @14493 has 33 MA's), (36, 14682), (37, 14697), (40, 14739), (41, 14790), (42, 14793), (50, 14913), (65, 15231), (67, 15264), (80, 15492), (85, 15534), (87, 15561), (95, 15669), (104, 15753), (108, 15783), (120, 15924), (136, 16140), (139, 16215), (143, 16245), (151, 16335), (152, 16344), (155, 16398), (159, 16440),

Gene: Softsoap_17 Start: 13727, Stop: 15697, Start Num: 22

Candidate Starts for Softsoap_17:

(Start: 22 @13727 has 33 MA's), (36, 13916), (37, 13931), (40, 13973), (41, 14024), (49, 14144), (50, 14147), (65, 14465), (67, 14498), (80, 14726), (85, 14768), (95, 14903), (104, 14987), (109, 15026), (114, 15101), (118, 15143), (136, 15371), (139, 15446), (146, 15491), (151, 15566), (152, 15575), (155, 15629), (159, 15671),

Gene: Swervy_18 Start: 13951, Stop: 15924, Start Num: 22

Candidate Starts for Swervy_18:

(Start: 22 @13951 has 33 MA's), (36, 14140), (37, 14155), (40, 14197), (41, 14248), (42, 14251), (50, 14371), (65, 14689), (67, 14722), (85, 14992), (95, 15127), (104, 15211), (108, 15241), (120, 15382), (136, 15598), (139, 15673), (143, 15703), (151, 15793), (152, 15802), (155, 15856), (159, 15898),

Gene: TukTuk_18 Start: 14009, Stop: 15982, Start Num: 22

Candidate Starts for TukTuk_18:

(Start: 22 @14009 has 33 MA's), (36, 14198), (37, 14213), (39, 14225), (40, 14255), (41, 14306), (49, 14426), (50, 14429), (65, 14747), (67, 14780), (80, 15008), (85, 15050), (94, 15164), (95, 15185), (104, 15269), (108, 15299), (139, 15731), (146, 15776), (147, 15803), (151, 15851), (152, 15860), (155, 15914), (159, 15956),

Gene: UtzChips_16 Start: 13138, Stop: 15648, Start Num: 2

Candidate Starts for UtzChips_16:

(1, 13102), (Start: 2 @13138 has 4 MA's), (8, 13528), (14, 13672), (16, 13705), (24, 13855), (35, 13978), (40, 14050), (44, 14125), (61, 14488), (62, 14494), (68, 14596), (76, 14779), (79, 14803), (154, 15565), (156, 15586), (157, 15598),

Gene: Vitas_17 Start: 12466, Stop: 14169, Start Num: 22

Candidate Starts for Vitas_17:

(Start: 22 @12466 has 33 MA's), (25, 12514), (30, 12559), (39, 12682), (40, 12712), (50, 12886), (51, 12898), (65, 13204), (66, 13207), (71, 13333), (73, 13384), (76, 13423), (78, 13435), (80, 13465), (82, 13471), (85, 13507), (124, 13879), (129, 13963), (142, 14143), (143, 14146),