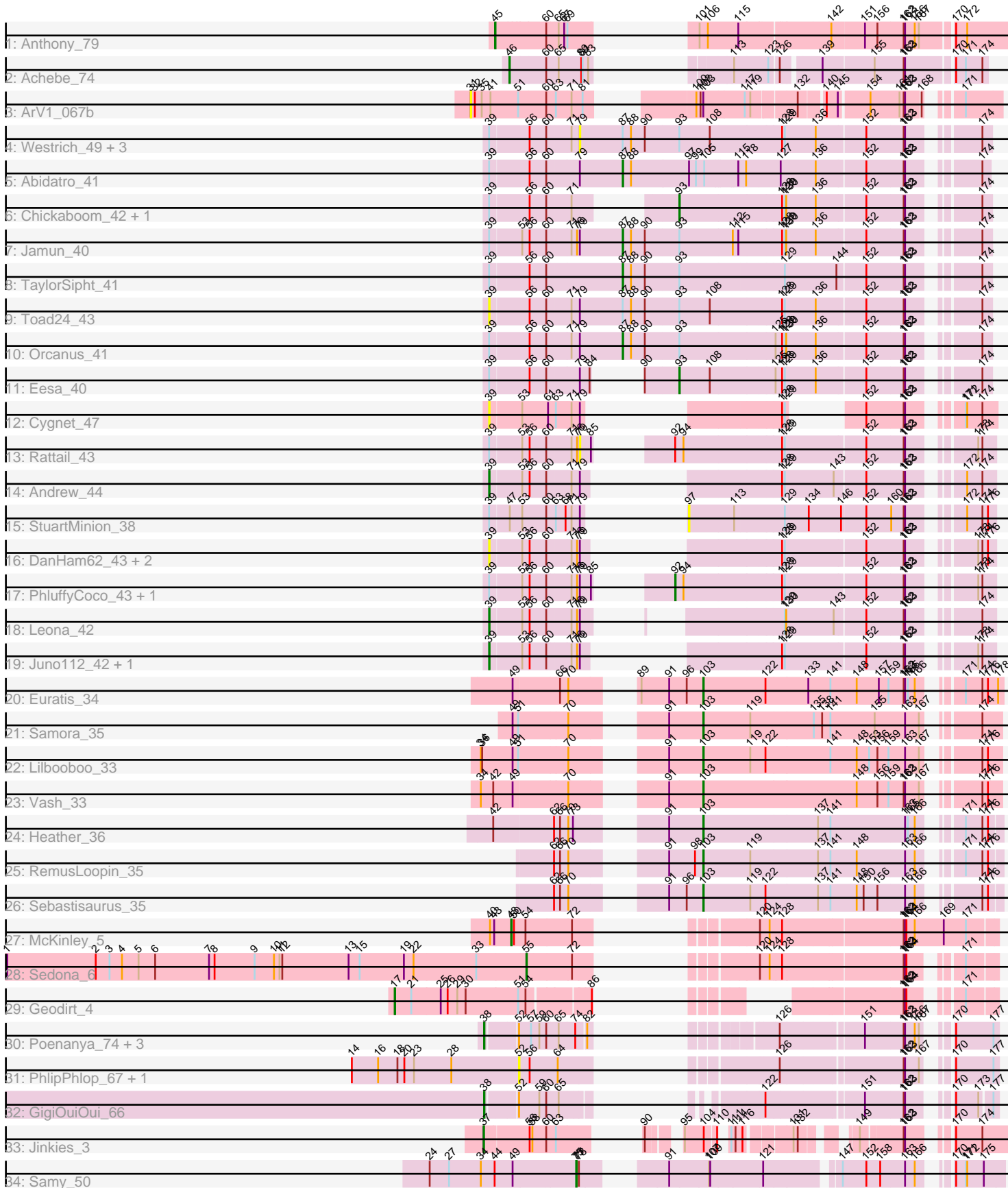


Pham 224678



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 224678 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224678 has 46 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Anthony_79
- Track 2 : Achebe_74
- Track 3 : ArV1_067b
- Track 4 : Westrich_49, KendraB23_51, Gravel_50, Pelletreau_50
- Track 5 : Abidatro_41
- Track 6 : Chickaboom_42, WileyE_46
- Track 7 : Jamun_40
- Track 8 : TaylorSipht_41
- Track 9 : Toad24_43
- Track 10 : Orcanus_41
- Track 11 : Eesa_40
- Track 12 : Cygnet_47
- Track 13 : Rattail_43
- Track 14 : Andrew_44
- Track 15 : StuartMinion_38
- Track 16 : DanHam62_43, AmiCi24_42, Atlantica_43
- Track 17 : PhluffyCoco_43, RedFox_43
- Track 18 : Leona_42
- Track 19 : Juno112_42, HamCheese_42
- Track 20 : Euratis_34
- Track 21 : Samora_35
- Track 22 : Lilbooboo_33
- Track 23 : Vash_33
- Track 24 : Heather_36
- Track 25 : RemusLoopin_35
- Track 26 : Sebastisaurus_35
- Track 27 : McKinley_5
- Track 28 : Sedona_6
- Track 29 : Geodirt_4
- Track 30 : Poenanya_74, RedBird_72, Empress_69, Doomphist_74
- Track 31 : PhlipPhlop_67, EmiMonkey_67
- Track 32 : GigiOuiOui_66
- Track 33 : Jinkies_3
- Track 34 : Samy_50

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

The start number called the most often in the published annotations is 103, it was called in 7 of the 30 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Euratis_34, Heather_36, Lilbooboo_33, RemusLoopin_35, Samora_35, Sebastisaurus_35, Vash_33,

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

- ArV1_067b,

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

- Abidatro_41, Achebe_74, AmiCi24_42, Andrew_44, Anthony_79, Atlantica_43, Chickaboom_42, Cygnet_47, DanHam62_43, Doomphist_74, Eesa_40, EmiMonkey_67, Empress_69, Geodirt_4, GigiOuiOui_66, Gravel_50, HamCheese_42, Jamun_40, Jinkies_3, Juno112_42, KendraB23_51, Leona_42, McKinley_5, Orcanus_41, Pelletreau_50, PhlipPhlop_67, PhluffyCoco_43, Poenanya_74, Rattail_43, RedBird_72, RedFox_43, Samy_50, Sedona_6, StuartMinion_38, TaylorSipht_41, Toad24_43, Westrich_49, WileyE_46,

Summary by start number:

Start 17:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 30
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Geodirt_4 (DE1),

Start 31:

- Found in 1 of 46 (2.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArV1_067b (AR),

Start 37:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 30
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jinkies_3 (FL),

Start 38:

- Found in 5 of 46 (10.9%) of genes in pham
- Manual Annotations of this start: 5 of 30
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Doomphist_74 (F1), Empress_69 (F1), GigiOuiOui_66 (F1), Poenanya_74 (F1), RedBird_72 (F1),

Start 39:

- Found in 24 of 46 (52.2%) of genes in pham
- Manual Annotations of this start: 3 of 30
- Called 37.5% of time when present

- Phage (with cluster) where this start called: AmiCi24_42 (AS3), Andrew_44 (AS3), Atlantica_43 (AS3), Cygnet_47 (AS2), DanHam62_43 (AS3), HamCheese_42 (AS3), Juno112_42 (AS3), Leona_42 (AS3), Toad24_43 (AS1),

Start 45:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 30
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anthony_79 (A20),

Start 46:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 30
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Achebe_74 (A4),

Start 48:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 30
- Called 100.0% of time when present
- Phage (with cluster) where this start called: McKinley_5 (DE1),

Start 52:

- Found in 7 of 46 (15.2%) of genes in pham
- No Manual Annotations of this start.
- Called 28.6% of time when present
- Phage (with cluster) where this start called: EmiMonkey_67 (F1), PhilipPhlop_67 (F1),

Start 55:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 30
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sedona_6 (DE1),

Start 75:

- Found in 1 of 46 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 30
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Samy_50 (singleton),

Start 79:

- Found in 21 of 46 (45.7%) of genes in pham
- No Manual Annotations of this start.
- Called 23.8% of time when present
- Phage (with cluster) where this start called: Gravel_50 (AS1), KendraB23_51 (AS1), Pelletreau_50 (AS1), Rattail_43 (AS3), Westrich_49 (AS1),

Start 87:

- Found in 9 of 46 (19.6%) of genes in pham
- Manual Annotations of this start: 4 of 30
- Called 44.4% of time when present

- Phage (with cluster) where this start called: Abidatro_41 (AS1), Jamun_40 (AS1), Orcanus_41 (AS1), TaylorSipht_41 (AS1),

Start 92:

- Found in 3 of 46 (6.5%) of genes in pham
- Manual Annotations of this start: 2 of 30
- Called 66.7% of time when present
- Phage (with cluster) where this start called: PhluffyCoco_43 (AS3), RedFox_43 (AS3),

Start 93:

- Found in 11 of 46 (23.9%) of genes in pham
- Manual Annotations of this start: 2 of 30
- Called 27.3% of time when present
- Phage (with cluster) where this start called: Chickaboom_42 (AS1), Eesa_40 (AS1), WileyE_46 (AS1),

Start 97:

- Found in 2 of 46 (4.3%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: StuartMinion_38 (AS3),

Start 103:

- Found in 8 of 46 (17.4%) of genes in pham
- Manual Annotations of this start: 7 of 30
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Euratis_34 (BB1), Heather_36 (BB2), Lilbooboo_33 (BB1), RemusLoopin_35 (BB2), Samora_35 (BB1), Sebastisaurus_35 (BB2), Vash_33 (BB1),

Summary by clusters:

There are 12 clusters represented in this pham: AS3, F1, singleton, AS2, DE1, AS1, A20, AR, A4, FL, BB2, BB1,

Info for manual annotations of cluster A20:

- Start number 45 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A4:

- Start number 46 was manually annotated 1 time for cluster A4.

Info for manual annotations of cluster AS1:

- Start number 87 was manually annotated 4 times for cluster AS1.
- Start number 93 was manually annotated 2 times for cluster AS1.

Info for manual annotations of cluster AS3:

- Start number 39 was manually annotated 3 times for cluster AS3.
- Start number 92 was manually annotated 2 times for cluster AS3.

Info for manual annotations of cluster BB1:

- Start number 103 was manually annotated 4 times for cluster BB1.

Info for manual annotations of cluster BB2:

- Start number 103 was manually annotated 3 times for cluster BB2.

Info for manual annotations of cluster DE1:

- Start number 17 was manually annotated 1 time for cluster DE1.
- Start number 48 was manually annotated 1 time for cluster DE1.
- Start number 55 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster F1:

- Start number 38 was manually annotated 5 times for cluster F1.

Info for manual annotations of cluster FL:

- Start number 37 was manually annotated 1 time for cluster FL.

Gene Information:

Gene: Abidatro_41 Start: 27763, Stop: 28476, Start Num: 87

Candidate Starts for Abidatro_41:

(Start: 39 @27487 has 3 MA's), (56, 27568), (60, 27604), (79, 27670), (Start: 87 @27763 has 4 MA's), (88, 27781), (97, 27901), (99, 27916), (105, 27934), (115, 28000), (118, 28015), (127, 28087), (136, 28162), (152, 28264), (162, 28339), (163, 28342), (174, 28459),

Gene: Achebe_74 Start: 46689, Stop: 45955, Start Num: 46

Candidate Starts for Achebe_74:

(Start: 46 @46689 has 1 MA's), (60, 46611), (65, 46590), (80, 46542), (81, 46539), (83, 46527), (113, 46434), (123, 46362), (126, 46344), (139, 46278), (155, 46173), (162, 46113), (163, 46110), (170, 46023), (171, 46002), (174, 45966),

Gene: AmiCi24_42 Start: 27168, Stop: 27965, Start Num: 39

Candidate Starts for AmiCi24_42:

(Start: 39 @27168 has 3 MA's), (53, 27234), (56, 27249), (60, 27285), (71, 27333), (76, 27345), (79, 27351), (128, 27567), (129, 27573), (152, 27741), (162, 27816), (163, 27819), (173, 27927), (174, 27936), (176, 27948),

Gene: Andrew_44 Start: 27053, Stop: 27850, Start Num: 39

Candidate Starts for Andrew_44:

(Start: 39 @27053 has 3 MA's), (53, 27119), (56, 27134), (60, 27170), (71, 27218), (79, 27236), (128, 27452), (129, 27458), (143, 27563), (152, 27626), (162, 27701), (163, 27704), (172, 27788), (174, 27821),

Gene: Anthony_79 Start: 47520, Stop: 46663, Start Num: 45

Candidate Starts for Anthony_79:

(Start: 45 @47520 has 1 MA's), (60, 47415), (65, 47394), (67, 47382), (69, 47376), (101, 47298), (106, 47280), (115, 47214), (142, 47034), (151, 46965), (156, 46941), (162, 46887), (163, 46884), (166, 46863), (167, 46854), (170, 46791), (172, 46767),

Gene: ArV1_067b Start: 51785, Stop: 52711, Start Num: 31

Candidate Starts for ArV1_067b:

(31, 51785), (32, 51794), (35, 51809), (41, 51827), (51, 51887), (60, 51944), (63, 51959), (71, 51992), (81, 52016), (100, 52154), (102, 52163), (Start: 103 @52169 has 7 MA's), (117, 52256), (119, 52265), (132, 52352), (140, 52400), (145, 52424), (154, 52484), (161, 52547), (162, 52556), (163, 52559), (168, 52589), (171, 52634),

Gene: Atlantica_43 Start: 27170, Stop: 27967, Start Num: 39

Candidate Starts for Atlantica_43:

(Start: 39 @27170 has 3 MA's), (53, 27236), (56, 27251), (60, 27287), (71, 27335), (76, 27347), (79, 27353), (128, 27569), (129, 27575), (152, 27743), (162, 27818), (163, 27821), (173, 27929), (174, 27938), (176, 27950),

Gene: Chickaboom_42 Start: 27783, Stop: 28385, Start Num: 93

Candidate Starts for Chickaboom_42:

(Start: 39 @27504 has 3 MA's), (56, 27585), (60, 27621), (71, 27669), (Start: 93 @27783 has 2 MA's), (128, 27996), (129, 28002), (130, 28005), (136, 28068), (152, 28170), (162, 28245), (163, 28248), (174, 28365),

Gene: Cygnet_47 Start: 28047, Stop: 28715, Start Num: 39

Candidate Starts for Cygnet_47:

(Start: 39 @28047 has 3 MA's), (53, 28113), (61, 28167), (63, 28179), (71, 28212), (79, 28230), (128, 28431), (129, 28437), (152, 28488), (162, 28563), (163, 28566), (171, 28647), (172, 28650), (174, 28683),

Gene: DanHam62_43 Start: 27169, Stop: 27966, Start Num: 39

Candidate Starts for DanHam62_43:

(Start: 39 @27169 has 3 MA's), (53, 27235), (56, 27250), (60, 27286), (71, 27334), (76, 27346), (79, 27352), (128, 27568), (129, 27574), (152, 27742), (162, 27817), (163, 27820), (173, 27928), (174, 27937), (176, 27949),

Gene: Doomphist_74 Start: 45998, Stop: 46735, Start Num: 38

Candidate Starts for Doomphist_74:

(Start: 38 @45998 has 5 MA's), (52, 46055), (57, 46079), (59, 46097), (60, 46112), (65, 46133), (74, 46166), (82, 46184), (126, 46343), (151, 46505), (162, 46583), (163, 46586), (166, 46607), (167, 46616), (170, 46643), (177, 46724),

Gene: Eesa_40 Start: 28668, Stop: 29270, Start Num: 93

Candidate Starts for Eesa_40:

(Start: 39 @28389 has 3 MA's), (56, 28470), (60, 28506), (79, 28572), (84, 28593), (90, 28596), (Start: 93 @28668 has 2 MA's), (108, 28734), (125, 28869), (128, 28881), (129, 28887), (136, 28953), (152, 29055), (162, 29130), (163, 29133), (174, 29250),

Gene: EmiMonkey_67 Start: 47844, Stop: 48557, Start Num: 52

Candidate Starts for EmiMonkey_67:

(14, 47481), (16, 47538), (18, 47580), (20, 47595), (23, 47616), (28, 47697), (52, 47844), (56, 47865), (64, 47925), (126, 48165), (162, 48405), (163, 48408), (167, 48438), (170, 48465), (177, 48546),

Gene: Empress_69 Start: 44809, Stop: 45546, Start Num: 38

Candidate Starts for Empress_69:

(Start: 38 @44809 has 5 MA's), (52, 44866), (57, 44890), (59, 44908), (60, 44923), (65, 44944), (74, 44977), (82, 44995), (126, 45154), (151, 45316), (162, 45394), (163, 45397), (166, 45418), (167, 45427), (170, 45454), (177, 45535),

Gene: Euratis_34 Start: 26257, Stop: 26847, Start Num: 103

Candidate Starts for Euratis_34:

(49, 25936), (66, 26032), (70, 26047), (89, 26125), (91, 26185), (96, 26221), (Start: 103 @26257 has 7 MA's), (122, 26392), (133, 26482), (141, 26530), (148, 26587), (157, 26635), (159, 26656), (162, 26686), (163, 26689), (165, 26695), (166, 26710), (171, 26767), (174, 26803), (176, 26815), (178, 26836),

Gene: Geodirt_4 Start: 2785, Stop: 3651, Start Num: 17

Candidate Starts for Geodirt_4:

(Start: 17 @2785 has 1 MA's), (21, 2821), (25, 2884), (26, 2899), (29, 2920), (30, 2938), (51, 3049), (54, 3064), (86, 3181), (162, 3505), (163, 3508), (164, 3511), (171, 3589),

Gene: GigiOuiOui_66 Start: 44414, Stop: 45145, Start Num: 38

Candidate Starts for GigiOuiOui_66:

(Start: 38 @44414 has 5 MA's), (52, 44471), (59, 44513), (60, 44528), (65, 44549), (122, 44729), (151, 44921), (162, 45002), (163, 45005), (170, 45062), (173, 45110), (177, 45134),

Gene: Gravel_50 Start: 28545, Stop: 29360, Start Num: 79

Candidate Starts for Gravel_50:

(Start: 39 @28362 has 3 MA's), (56, 28443), (60, 28479), (71, 28527), (79, 28545), (Start: 87 @28638 has 4 MA's), (88, 28656), (90, 28686), (Start: 93 @28758 has 2 MA's), (108, 28824), (128, 28971), (129, 28977), (136, 29043), (152, 29145), (162, 29220), (163, 29223), (174, 29340),

Gene: HamCheese_42 Start: 27156, Stop: 27953, Start Num: 39

Candidate Starts for HamCheese_42:

(Start: 39 @27156 has 3 MA's), (53, 27222), (56, 27237), (60, 27273), (71, 27321), (76, 27333), (79, 27339), (128, 27555), (129, 27561), (152, 27729), (162, 27804), (163, 27807), (173, 27915), (174, 27924),

Gene: Heather_36 Start: 27272, Stop: 27856, Start Num: 103

Candidate Starts for Heather_36:

(42, 26909), (62, 27035), (66, 27047), (70, 27062), (73, 27071), (91, 27200), (Start: 103 @27272 has 7 MA's), (137, 27518), (141, 27545), (163, 27704), (165, 27710), (166, 27725), (171, 27782), (174, 27818), (176, 27830),

Gene: Jamun_40 Start: 27823, Stop: 28545, Start Num: 87

Candidate Starts for Jamun_40:

(Start: 39 @27547 has 3 MA's), (53, 27613), (56, 27628), (60, 27664), (71, 27712), (76, 27724), (79, 27730), (Start: 87 @27823 has 4 MA's), (88, 27841), (90, 27871), (Start: 93 @27943 has 2 MA's), (112, 28057), (115, 28069), (128, 28156), (129, 28162), (130, 28165), (136, 28228), (152, 28330), (162, 28405), (163, 28408), (174, 28525),

Gene: Jinkies_3 Start: 2349, Stop: 3125, Start Num: 37

Candidate Starts for Jinkies_3:

(Start: 37 @2349 has 1 MA's), (56, 2442), (58, 2448), (60, 2478), (63, 2493), (90, 2571), (95, 2616), (104, 2649), (110, 2670), (111, 2676), (114, 2685), (116, 2700), (131, 2784), (132, 2793), (149, 2871), (162, 2952), (163, 2955), (170, 3015), (174, 3072),

Gene: Juno112_42 Start: 27172, Stop: 27969, Start Num: 39

Candidate Starts for Juno112_42:

(Start: 39 @27172 has 3 MA's), (53, 27238), (56, 27253), (60, 27289), (71, 27337), (76, 27349), (79, 27355), (128, 27571), (129, 27577), (152, 27745), (162, 27820), (163, 27823), (173, 27931), (174, 27940),

Gene: KendraB23_51 Start: 28732, Stop: 29547, Start Num: 79

Candidate Starts for KendraB23_51:

(Start: 39 @28549 has 3 MA's), (56, 28630), (60, 28666), (71, 28714), (79, 28732), (Start: 87 @28825 has 4 MA's), (88, 28843), (90, 28873), (Start: 93 @28945 has 2 MA's), (108, 29011), (128, 29158), (129, 29164), (136, 29230), (152, 29332), (162, 29407), (163, 29410), (174, 29527),

Gene: Leona_42 Start: 27237, Stop: 28046, Start Num: 39

Candidate Starts for Leona_42:

(Start: 39 @27237 has 3 MA's), (53, 27303), (56, 27318), (60, 27354), (71, 27402), (76, 27414), (79, 27420), (129, 27654), (130, 27657), (143, 27759), (152, 27822), (162, 27897), (163, 27900), (174, 28017),

Gene: Lilbooboo_33 Start: 26272, Stop: 26859, Start Num: 103

Candidate Starts for Lilbooboo_33:

(34, 25882), (36, 25885), (49, 25951), (51, 25963), (70, 26062), (91, 26200), (Start: 103 @26272 has 7 MA's), (119, 26374), (122, 26407), (141, 26545), (148, 26602), (153, 26629), (156, 26647), (159, 26671), (163, 26704), (167, 26734), (174, 26818), (176, 26830),

Gene: McKinley_5 Start: 3198, Stop: 3983, Start Num: 48

Candidate Starts for McKinley_5:

(40, 3156), (43, 3165), (Start: 48 @3198 has 1 MA's), (50, 3204), (54, 3228), (72, 3327), (120, 3495), (124, 3516), (128, 3537), (162, 3786), (163, 3789), (164, 3792), (166, 3810), (169, 3873), (171, 3921),

Gene: Orcanus_41 Start: 28182, Stop: 28904, Start Num: 87

Candidate Starts for Orcanus_41:

(Start: 39 @27906 has 3 MA's), (56, 27987), (60, 28023), (71, 28071), (79, 28089), (Start: 87 @28182 has 4 MA's), (88, 28200), (90, 28230), (Start: 93 @28302 has 2 MA's), (125, 28503), (128, 28515), (129, 28521), (130, 28524), (136, 28587), (152, 28689), (162, 28764), (163, 28767), (174, 28884),

Gene: Pelletreau_50 Start: 28545, Stop: 29360, Start Num: 79

Candidate Starts for Pelletreau_50:

(Start: 39 @28362 has 3 MA's), (56, 28443), (60, 28479), (71, 28527), (79, 28545), (Start: 87 @28638 has 4 MA's), (88, 28656), (90, 28686), (Start: 93 @28758 has 2 MA's), (108, 28824), (128, 28971), (129, 28977), (136, 29043), (152, 29145), (162, 29220), (163, 29223), (174, 29340),

Gene: PhlipPhlop_67 Start: 47844, Stop: 48557, Start Num: 52

Candidate Starts for PhlipPhlop_67:

(14, 47481), (16, 47538), (18, 47580), (20, 47595), (23, 47616), (28, 47697), (52, 47844), (56, 47865), (64, 47925), (126, 48165), (162, 48405), (163, 48408), (167, 48438), (170, 48465), (177, 48546),

Gene: PhluffyCoco_43 Start: 27444, Stop: 28064, Start Num: 92

Candidate Starts for PhluffyCoco_43:

(Start: 39 @27168 has 3 MA's), (53, 27234), (56, 27249), (60, 27285), (71, 27333), (76, 27345), (79, 27351), (85, 27375), (Start: 92 @27444 has 2 MA's), (94, 27462), (128, 27666), (129, 27672), (152, 27840), (162, 27915), (163, 27918), (173, 28026), (174, 28035),

Gene: Poenanya_74 Start: 45998, Stop: 46735, Start Num: 38

Candidate Starts for Poenanya_74:

(Start: 38 @45998 has 5 MA's), (52, 46055), (57, 46079), (59, 46097), (60, 46112), (65, 46133), (74, 46166), (82, 46184), (126, 46343), (151, 46505), (162, 46583), (163, 46586), (166, 46607), (167, 46616), (170, 46643), (177, 46724),

Gene: Rattail_43 Start: 27437, Stop: 28150, Start Num: 79

Candidate Starts for Rattail_43:

(Start: 39 @27254 has 3 MA's), (53, 27320), (56, 27335), (60, 27371), (71, 27419), (76, 27431), (79, 27437), (85, 27461), (Start: 92 @27530 has 2 MA's), (94, 27548), (128, 27752), (129, 27758), (152, 27926), (162, 28001), (163, 28004), (173, 28112), (174, 28121),

Gene: RedBird_72 Start: 44502, Stop: 45227, Start Num: 38

Candidate Starts for RedBird_72:

(Start: 38 @44502 has 5 MA's), (52, 44559), (57, 44583), (59, 44589), (60, 44604), (65, 44625), (74, 44658), (82, 44676), (126, 44835), (151, 44997), (162, 45075), (163, 45078), (166, 45099), (167, 45108), (170, 45135), (177, 45216),

Gene: RedFox_43 Start: 27443, Stop: 28063, Start Num: 92

Candidate Starts for RedFox_43:

(Start: 39 @27167 has 3 MA's), (53, 27233), (56, 27248), (60, 27284), (71, 27332), (76, 27344), (79, 27350), (85, 27374), (Start: 92 @27443 has 2 MA's), (94, 27461), (128, 27665), (129, 27671), (152, 27839), (162, 27914), (163, 27917), (173, 28025), (174, 28034),

Gene: RemusLoopin_35 Start: 27467, Stop: 28051, Start Num: 103

Candidate Starts for RemusLoopin_35:

(62, 27230), (66, 27242), (70, 27257), (91, 27395), (98, 27449), (Start: 103 @27467 has 7 MA's), (119, 27569), (137, 27713), (141, 27740), (148, 27797), (163, 27899), (166, 27920), (171, 27977), (174, 28013), (176, 28025),

Gene: Samora_35 Start: 26872, Stop: 27459, Start Num: 103

Candidate Starts for Samora_35:

(49, 26551), (51, 26563), (70, 26662), (91, 26800), (Start: 103 @26872 has 7 MA's), (119, 26974), (135, 27109), (138, 27127), (141, 27145), (155, 27241), (163, 27304), (167, 27334), (174, 27418),

Gene: Samy_50 Start: 33615, Stop: 34364, Start Num: 75

Candidate Starts for Samy_50:

(24, 33303), (27, 33345), (34, 33414), (44, 33444), (49, 33483), (Start: 75 @33615 has 1 MA's), (77, 33618), (78, 33621), (91, 33735), (107, 33819), (109, 33822), (121, 33933), (147, 34071), (152, 34122), (158, 34152), (163, 34203), (166, 34224), (170, 34260), (171, 34281), (172, 34284), (175, 34320),

Gene: Sebastisaurus_35 Start: 27189, Stop: 27773, Start Num: 103

Candidate Starts for Sebastisaurus_35:

(62, 26952), (66, 26964), (70, 26979), (91, 27117), (96, 27153), (Start: 103 @27189 has 7 MA's), (119, 27291), (122, 27324), (137, 27435), (141, 27462), (148, 27519), (150, 27534), (156, 27564), (163, 27621), (166, 27642), (174, 27735), (176, 27747),

Gene: Sedona_6 Start: 4350, Stop: 5051, Start Num: 55

Candidate Starts for Sedona_6:

(1, 3228), (2, 3420), (3, 3450), (4, 3477), (5, 3513), (6, 3549), (7, 3666), (8, 3678), (9, 3765), (10, 3807), (11, 3819), (12, 3825), (13, 3969), (15, 3993), (19, 4089), (22, 4110), (33, 4245), (Start: 55 @4350 has 1 MA's), (72, 4446), (120, 4614), (124, 4635), (128, 4656), (162, 4905), (163, 4908), (164, 4911), (171, 4989),

Gene: StuartMinion_38 Start: 24430, Stop: 25020, Start Num: 97

Candidate Starts for StuartMinion_38:

(Start: 39 @24235 has 3 MA's), (47, 24274), (53, 24301), (60, 24352), (63, 24367), (68, 24388), (71, 24400), (79, 24418), (97, 24430), (113, 24526), (129, 24625), (134, 24676), (146, 24745), (152, 24796), (160, 24844), (162, 24871), (163, 24874), (172, 24958), (174, 24991), (176, 25003),

Gene: TaylorSipht_41 Start: 27587, Stop: 28306, Start Num: 87

Candidate Starts for TaylorSipht_41:

(Start: 39 @27311 has 3 MA's), (56, 27392), (60, 27428), (Start: 87 @27587 has 4 MA's), (88, 27605), (90, 27635), (Start: 93 @27707 has 2 MA's), (129, 27923), (144, 28034), (152, 28091), (162, 28166), (163, 28169), (174, 28286),

Gene: Toad24_43 Start: 28602, Stop: 29600, Start Num: 39

Candidate Starts for Toad24_43:

(Start: 39 @28602 has 3 MA's), (56, 28683), (60, 28719), (71, 28767), (79, 28785), (Start: 87 @28878 has 4 MA's), (88, 28896), (90, 28926), (Start: 93 @28998 has 2 MA's), (108, 29064), (128, 29211), (129, 29217), (136, 29283), (152, 29385), (162, 29460), (163, 29463), (174, 29580),

Gene: Vash_33 Start: 26115, Stop: 26702, Start Num: 103

Candidate Starts for Vash_33:

(34, 25725), (42, 25752), (49, 25794), (70, 25905), (91, 26043), (Start: 103 @26115 has 7 MA's), (148, 26445), (156, 26490), (159, 26514), (162, 26544), (163, 26547), (167, 26577), (174, 26661), (176, 26673),

Gene: Westrich_49 Start: 28469, Stop: 29284, Start Num: 79

Candidate Starts for Westrich_49:

(Start: 39 @28286 has 3 MA's), (56, 28367), (60, 28403), (71, 28451), (79, 28469), (Start: 87 @28562 has 4 MA's), (88, 28580), (90, 28610), (Start: 93 @28682 has 2 MA's), (108, 28748), (128, 28895), (129, 28901), (136, 28967), (152, 29069), (162, 29144), (163, 29147), (174, 29264),

Gene: WileyE_46 Start: 27783, Stop: 28385, Start Num: 93

Candidate Starts for WileyE_46:

(Start: 39 @27504 has 3 MA's), (56, 27585), (60, 27621), (71, 27669), (Start: 93 @27783 has 2 MA's), (128, 27996), (129, 28002), (130, 28005), (136, 28068), (152, 28170), (162, 28245), (163, 28248), (174, 28365),