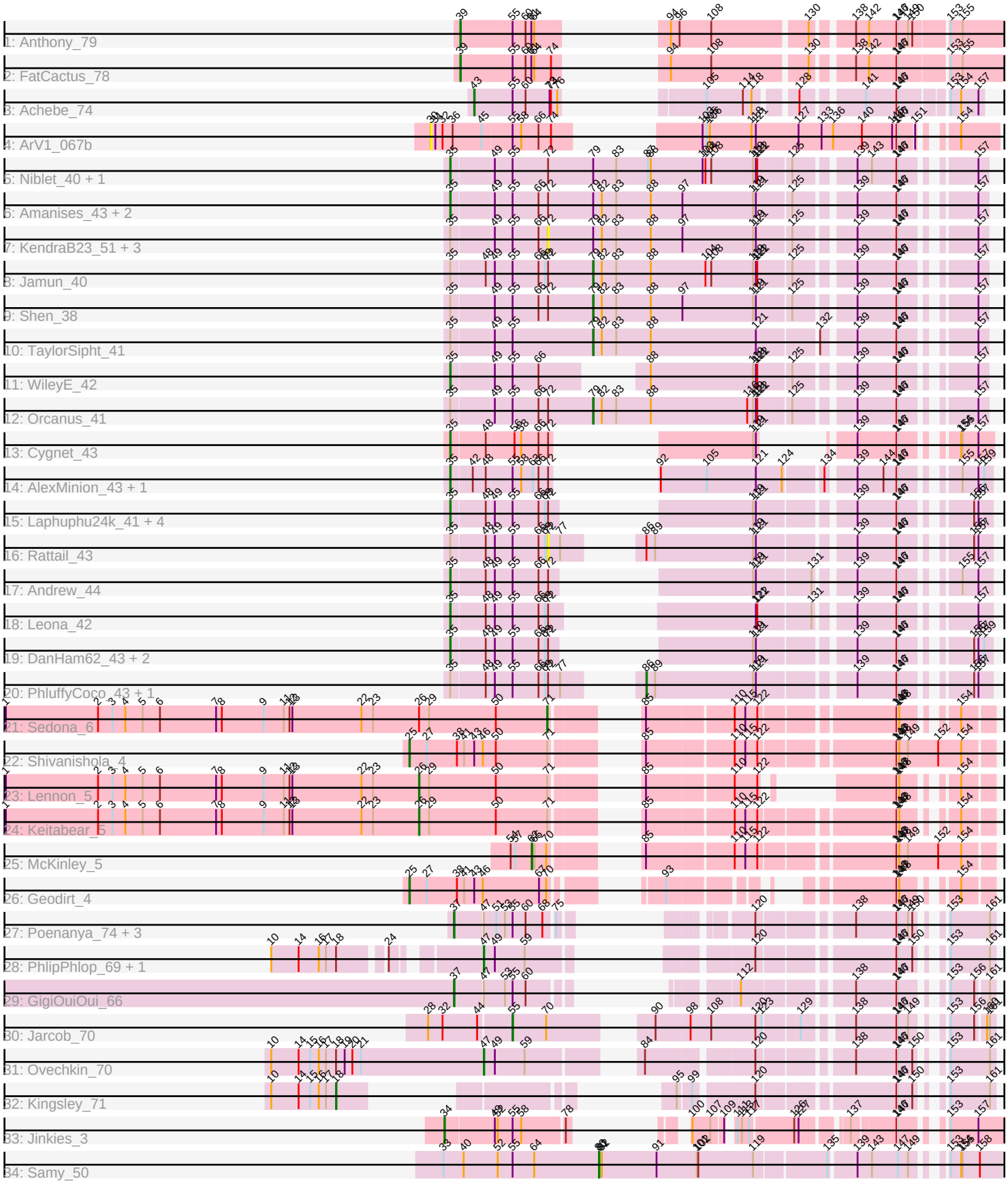
Pham 347693


1: Anthony_79
2: FatCactus_78
3: Achebe_74
4: ArV1_067b
5: Niblet_40 + 1
6: Amanises_43 + 2
7: KendraB23_51 + 3
8: Jamun_40
9: Shen_38
10: TaylorSipht_41
11: WileyE_42
12: Orcanus_41
13: Cygnet_43
14: AlexMinion_43 + 1
15: Laphuphu24k_41 + 4
16: Rattail_43
17: Andrew_44
18: Leona_42
19: DanHam62_43 + 2
20: PhluffyCoco_43 + 1
21: Sedona_6
22: Shivanishola_4
23: Lennon_5
24: Keitabear_5
25: McKinley_5
26: Geodirt_4
27: Poenanya_74 + 3
28: PhlipPhlop_69 + 1
29: GigiOuiOui_66
30: Jarcob_70
31: Ovechkin_70
32: Kingsley_71
33: Jinkies_3
34: Samy_50

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 347693 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347693 has 52 members, 8 are drafts.

Phages represented in each track:
- Track 1 : Anthony_79
- Track 2 : FatCactus_78
- Track 3 : Achebe_74
- Track 4 : ArV1_067b
- Track 5 : Niblet_40, Chicken_40
- Track 6 : Amanises_43, Toad24_43, Zixiang_40
- Track 7 : KendraB23_51, Westrich_49, Gravel_50, Pelletreau_50
- Track 8 : Jamun_40
- Track 9 : Shen_38
- Track 10 : TaylorSipht_41
- Track 11 : WileyE_42
- Track 12 : Orcanus_41
- Track 13 : Cygnet_43
- Track 14 : AlexMinion_43, StuartMinion_35
- Track 15 : Laphuphu24k_41, Fingolfin_43, Oppalora_42, Juno112_42, HamCheese_43
- Track 16 : Rattail_43
- Track 17 : Andrew_44
- Track 18 : Leona_42
- Track 19 : DanHam62_43, AmiCi24_42, Atlantica_43
- Track 20 : PhluffyCoco_43, RedFox_43
- Track 21 : Sedona_6
- Track 22 : Shivanishola_4
- Track 23 : Lennon_5
- Track 24 : Keitabear_5
- Track 25 : McKinley_5
- Track 26 : Geodirt_4
- Track 27 : Poenanya_74, Empress_69, Doomphist_74, RedBird_72
- Track 28 : PhlipPhlop_69, EmiMonkey_67
- Track 29 : GigiOuiOui_66
- Track 30 : Jarcob_70
- Track 31 : Ovechkin_70
- Track 32 : Kingsley_71
- 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 35, it was called in 18 of the 44 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AlexMinion_43, Amanises_43, AmiCi24_42, Andrew_44, Atlantica_43, Chicken_40, Cygnet_43, DanHam62_43, Fingolfin_43, HamCheese_43, Juno112_42, Laphuphu24k_41, Leona_42, Niblet_40, Oppalora_42, StuartMinion_35, Toad24_43, WileyE_42, Zixiang_40,

Genes that have the "Most Annotated" start but do not call it:
• Gravel_50, Jamun_40, KendraB23_51, Orcanus_41, Pelletreau_50, PhluffyCoco_43, Rattail_43, RedFox_43, Shen_38, TaylorSipht_41, Westrich_49,

Genes that do not have the "Most Annotated" start:
• Achebe_74, Anthony_79, ArV1_067b, Doomphist_74, EmiMonkey_67, Empress_69, FatCactus_78, Geodirt_4, GigiOuiOui_66, Jarcob_70, Jinkies_3, Keitabear_5, Kingsley_71, Lennon_5, McKinley_5, Ovechkin_70, PhlipPhlop_69, Poenanya_74, RedBird_72, Samy_50, Sedona_6, Shivanishola_4,

Summary by start number:

Start 18:
• Found in 4 of 52 (7.7%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Kingsley_71 (F1),

Start 25:
• Found in 2 of 52 (3.8%) of genes in pham
• Manual Annotations of this start: 2 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Geodirt_4 (DE1), Shivanishola_4 (DE1),

Start 26:
• Found in 3 of 52 (5.8%) of genes in pham
• Manual Annotations of this start: 2 of 44
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Keitabear_5 (DE1), Lennon_5 (DE1),

Start 30:
• Found in 1 of 52 (1.9%) 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 34:
• Found in 1 of 52 (1.9%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jinkies_3 (FL),

Start 35:
• Found in 30 of 52 (57.7%) of genes in pham
• Manual Annotations of this start: 18 of 44
• Called 63.3% of time when present
• Phage (with cluster) where this start called: AlexMinion_43 (AS3), Amanises_43 (AS1), AmiCi24_42 (AS3), Andrew_44 (AS3), Atlantica_43 (AS3), Chicken_40 (AS1), Cygnet_43 (AS2), DanHam62_43 (AS3), Fingolfin_43 (AS3), HamCheese_43 (AS3), Juno112_42 (AS3), Laphuphu24k_41 (AS3), Leona_42 (AS3), Niblet_40 (AS1), Oppalora_42 (AS3), StuartMinion_35 (AS3), Toad24_43 (AS1), WileyE_42 (AS1), Zixiang_40 (AS1),

Start 37:
• Found in 5 of 52 (9.6%) of genes in pham
• Manual Annotations of this start: 5 of 44
• 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 2 of 52 (3.8%) of genes in pham
• Manual Annotations of this start: 2 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Anthony_79 (A20), FatCactus_78 (A20),

Start 43:
• Found in 3 of 52 (5.8%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Achebe_74 (A4),

Start 47:
• Found in 8 of 52 (15.4%) of genes in pham
• Manual Annotations of this start: 2 of 44
• Called 37.5% of time when present
• Phage (with cluster) where this start called: EmiMonkey_67 (F1), Ovechkin_70 (F1), PhlipPhlop_69 (F1),

Start 55:
• Found in 41 of 52 (78.8%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 2.4% of time when present
• Phage (with cluster) where this start called: Jarcob_70 (F1),

Start 62:
• Found in 1 of 52 (1.9%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: McKinley_5 (DE1),

Start 71:
• Found in 4 of 52 (7.7%) of genes in pham
• Manual Annotations of this start: 1 of 44

• Called 25.0% of time when present
• Phage (with cluster) where this start called: Sedona_6 (DE1),

Start 72:
• Found in 28 of 52 (53.8%) of genes in pham
• No Manual Annotations of this start.
• Called 17.9% 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 79:
• Found in 13 of 52 (25.0%) of genes in pham
• Manual Annotations of this start: 4 of 44
• Called 30.8% of time when present
• Phage (with cluster) where this start called: Jamun_40 (AS1), Orcanus_41 (AS1), Shen_38 (AS1), TaylorSipht_41 (AS1),

Start 80:
• Found in 1 of 52 (1.9%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Samy_50 (singleton),

Start 86:
• Found in 3 of 52 (5.8%) of genes in pham
• Manual Annotations of this start: 2 of 44
• Called 66.7% of time when present
• Phage (with cluster) where this start called: PhluffyCoco_43 (AS3), RedFox_43 (AS3),

Summary by clusters:

There are 10 clusters represented in this pham: AS3, F1, singleton, AS2, DE1, AS1, A20, AR, A4, FL,

Info for manual annotations of cluster A20:
•Start number 39 was manually annotated 2 times for cluster A20.

Info for manual annotations of cluster A4:
•Start number 43 was manually annotated 1 time for cluster A4.

Info for manual annotations of cluster AS1:
•Start number 35 was manually annotated 6 times for cluster AS1.
•Start number 79 was manually annotated 4 times for cluster AS1.

Info for manual annotations of cluster AS2:
•Start number 35 was manually annotated 1 time for cluster AS2.

Info for manual annotations of cluster AS3:
•Start number 35 was manually annotated 11 times for cluster AS3.
•Start number 86 was manually annotated 2 times for cluster AS3.

Info for manual annotations of cluster DE1:
•Start number 25 was manually annotated 2 times for cluster DE1.
•Start number 26 was manually annotated 2 times for cluster DE1.
•Start number 62 was manually annotated 1 time for cluster DE1.
•Start number 71 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster F1:
•Start number 18 was manually annotated 1 time for cluster F1.
•Start number 37 was manually annotated 5 times for cluster F1.
•Start number 47 was manually annotated 2 times for cluster F1.
•Start number 55 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster FL:
•Start number 34 was manually annotated 1 time for cluster FL.

Gene Information:

Gene: Achebe_74 Start: 46689, Stop: 45955, Start Num: 43
Candidate Starts for Achebe_74:
(Start: 43 @46689 has 1 MA's), (Start: 55 @46611 has 1 MA's), (60, 46590), (73, 46542), (74, 46539), (76, 46527), (105, 46434), (114, 46362), (118, 46344), (128, 46278), (141, 46173), (146, 46113), (147, 46110), (153, 46023), (154, 46002), (157, 45966),

Gene: AlexMinion_43 Start: 27336, Stop: 28121, Start Num: 35
Candidate Starts for AlexMinion_43:
(Start: 35 @27336 has 18 MA's), (42, 27375), (48, 27402), (Start: 55 @27453 has 1 MA's), (58, 27468), (63, 27489), (66, 27501), (72, 27519), (92, 27531), (105, 27627), (121, 27726), (124, 27777), (134, 27846), (139, 27897), (144, 27945), (146, 27972), (147, 27975), (155, 28059), (157, 28092), (159, 28104),

Gene: Amanises_43 Start: 28549, Stop: 29547, Start Num: 35
Candidate Starts for Amanises_43:
(Start: 35 @28549 has 18 MA's), (49, 28630), (Start: 55 @28666 has 1 MA's), (66, 28714), (72, 28732), (Start: 79 @28825 has 4 MA's), (82, 28843), (83, 28873), (88, 28945), (97, 29011), (119, 29158), (121, 29164), (125, 29230), (139, 29332), (146, 29407), (147, 29410), (157, 29527),

Gene: AmiCi24_42 Start: 27168, Stop: 27965, Start Num: 35
Candidate Starts for AmiCi24_42:
(Start: 35 @27168 has 18 MA's), (48, 27234), (49, 27249), (Start: 55 @27285 has 1 MA's), (66, 27333), (69, 27345), (72, 27351), (119, 27567), (121, 27573), (139, 27741), (146, 27816), (147, 27819), (156, 27927), (157, 27936), (159, 27948),

Gene: Andrew_44 Start: 27053, Stop: 27850, Start Num: 35
Candidate Starts for Andrew_44:
(Start: 35 @27053 has 18 MA's), (48, 27119), (49, 27134), (Start: 55 @27170 has 1 MA's), (66, 27218), (72, 27236), (119, 27452), (121, 27458), (131, 27563), (139, 27626), (146, 27701), (147, 27704), (155, 27788), (157, 27821),

Gene: Anthony_79 Start: 47520, Stop: 46663, Start Num: 39
Candidate Starts for Anthony_79:

(Start: 39 @47520 has 2 MA's), (Start: 55 @47415 has 1 MA's), (60, 47394), (61, 47382), (64, 47376), (94, 47298), (96, 47280), (108, 47214), (130, 47034), (138, 46965), (142, 46941), (146, 46887), (147, 46884), (149, 46863), (150, 46854), (153, 46791), (155, 46767),

Gene: ArV1_067b Start: 51785, Stop: 52711, Start Num: 30
Candidate Starts for ArV1_067b:
(30, 51785), (31, 51794), (32, 51809), (36, 51827), (45, 51887), (Start: 55 @51944 has 1 MA's), (58, 51959), (66, 51992), (74, 52016), (103, 52154), (105, 52163), (106, 52169), (118, 52256), (121, 52265), (127, 52352), (133, 52400), (136, 52424), (140, 52484), (145, 52547), (146, 52556), (147, 52559), (151, 52589), (154, 52634),

Gene: Atlantica_43 Start: 27170, Stop: 27967, Start Num: 35
Candidate Starts for Atlantica_43:
(Start: 35 @27170 has 18 MA's), (48, 27236), (49, 27251), (Start: 55 @27287 has 1 MA's), (66, 27335), (69, 27347), (72, 27353), (119, 27569), (121, 27575), (139, 27743), (146, 27818), (147, 27821), (156, 27929), (157, 27938), (159, 27950),

Gene: Chicken_40 Start: 27850, Stop: 28848, Start Num: 35
Candidate Starts for Chicken_40:
(Start: 35 @27850 has 18 MA's), (49, 27931), (Start: 55 @27967 has 1 MA's), (72, 28033), (Start: 79 @28126 has 4 MA's), (83, 28174), (87, 28240), (88, 28246), (103, 28354), (104, 28360), (108, 28372), (119, 28459), (121, 28465), (122, 28468), (125, 28531), (139, 28633), (143, 28660), (146, 28708), (147, 28711), (157, 28828),

Gene: Cygnet_43 Start: 28047, Stop: 28715, Start Num: 35
Candidate Starts for Cygnet_43:
(Start: 35 @28047 has 18 MA's), (48, 28113), (56, 28167), (58, 28179), (66, 28212), (72, 28230), (119, 28431), (121, 28437), (139, 28488), (146, 28563), (147, 28566), (154, 28647), (155, 28650), (157, 28683),

Gene: DanHam62_43 Start: 27169, Stop: 27966, Start Num: 35
Candidate Starts for DanHam62_43:
(Start: 35 @27169 has 18 MA's), (48, 27235), (49, 27250), (Start: 55 @27286 has 1 MA's), (66, 27334), (69, 27346), (72, 27352), (119, 27568), (121, 27574), (139, 27742), (146, 27817), (147, 27820), (156, 27928), (157, 27937), (159, 27949),

Gene: Doomphist_74 Start: 45998, Stop: 46735, Start Num: 37
Candidate Starts for Doomphist_74:
(Start: 37 @45998 has 5 MA's), (Start: 47 @46055 has 2 MA's), (51, 46079), (53, 46097), (Start: 55 @46112 has 1 MA's), (60, 46133), (68, 46166), (75, 46184), (120, 46343), (138, 46505), (146, 46583), (147, 46586), (149, 46607), (150, 46616), (153, 46643), (161, 46724),

Gene: EmiMonkey_67 Start: 47844, Stop: 48557, Start Num: 47
Candidate Starts for EmiMonkey_67:
(10, 47481), (14, 47538), (16, 47580), (17, 47595), (Start: 18 @47616 has 1 MA's), (24, 47697), (Start: 47 @47844 has 2 MA's), (49, 47865), (59, 47925), (120, 48165), (146, 48405), (147, 48408), (150, 48438), (153, 48465), (161, 48546),

Gene: Empress_69 Start: 44809, Stop: 45546, Start Num: 37
Candidate Starts for Empress_69:
(Start: 37 @44809 has 5 MA's), (Start: 47 @44866 has 2 MA's), (51, 44890), (53, 44908), (Start: 55 @44923 has 1 MA's), (60, 44944), (68, 44977), (75, 44995), (120, 45154), (138, 45316), (146, 45394), (147, 45397), (149, 45418), (150, 45427), (153, 45454), (161, 45535),

Gene: FatCactus_78 Start: 46983, Stop: 46126, Start Num: 39
Candidate Starts for FatCactus_78:
(Start: 39 @46983 has 2 MA's), (Start: 55 @46878 has 1 MA's), (60, 46857), (61, 46845), (64, 46839), (74, 46806), (94, 46761), (108, 46677), (130, 46497), (138, 46428), (142, 46404), (146, 46350), (147, 46347), (153, 46254), (155, 46230),

Gene: Fingolfin_43 Start: 27172, Stop: 27969, Start Num: 35
Candidate Starts for Fingolfin_43:
(Start: 35 @27172 has 18 MA's), (48, 27238), (49, 27253), (Start: 55 @27289 has 1 MA's), (66, 27337), (69, 27349), (72, 27355), (119, 27571), (121, 27577), (139, 27745), (146, 27820), (147, 27823), (156, 27931), (157, 27940),

Gene: Geodirt_4 Start: 2785, Stop: 3651, Start Num: 25
Candidate Starts for Geodirt_4:
(Start: 25 @2785 has 2 MA's), (27, 2821), (38, 2884), (41, 2899), (Start: 43 @2920 has 1 MA's), (46, 2938), (67, 3049), (70, 3064), (93, 3181), (146, 3505), (147, 3508), (148, 3511), (154, 3589),

Gene: GigiOuiOui_66 Start: 44414, Stop: 45145, Start Num: 37
Candidate Starts for GigiOuiOui_66:
(Start: 37 @44414 has 5 MA's), (Start: 47 @44471 has 2 MA's), (53, 44513), (Start: 55 @44528 has 1 MA's), (60, 44549), (112, 44729), (138, 44921), (146, 45002), (147, 45005), (153, 45062), (156, 45110), (161, 45134),

Gene: Gravel_50 Start: 28545, Stop: 29360, Start Num: 72
Candidate Starts for Gravel_50:
(Start: 35 @28362 has 18 MA's), (49, 28443), (Start: 55 @28479 has 1 MA's), (66, 28527), (72, 28545), (Start: 79 @28638 has 4 MA's), (82, 28656), (83, 28686), (88, 28758), (97, 28824), (119, 28971), (121, 28977), (125, 29043), (139, 29145), (146, 29220), (147, 29223), (157, 29340),

Gene: HamCheese_43 Start: 27156, Stop: 27953, Start Num: 35
Candidate Starts for HamCheese_43:
(Start: 35 @27156 has 18 MA's), (48, 27222), (49, 27237), (Start: 55 @27273 has 1 MA's), (66, 27321), (69, 27333), (72, 27339), (119, 27555), (121, 27561), (139, 27729), (146, 27804), (147, 27807), (156, 27915), (157, 27924),

Gene: Jamun_40 Start: 27823, Stop: 28545, Start Num: 79
Candidate Starts for Jamun_40:
(Start: 35 @27547 has 18 MA's), (48, 27613), (49, 27628), (Start: 55 @27664 has 1 MA's), (66, 27712), (69, 27724), (72, 27730), (Start: 79 @27823 has 4 MA's), (82, 27841), (83, 27871), (88, 27943), (104, 28057), (108, 28069), (119, 28156), (121, 28162), (122, 28165), (125, 28228), (139, 28330), (146, 28405), (147, 28408), (157, 28525),

Gene: Jarcob_70 Start: 45803, Stop: 46582, Start Num: 55
Candidate Starts for Jarcob_70:
(28, 45638), (32, 45668), (44, 45740), (Start: 55 @45803 has 1 MA's), (70, 45866), (90, 46013), (98, 46082), (108, 46124), (120, 46208), (123, 46217), (129, 46280), (138, 46361), (146, 46439), (147, 46442), (149, 46463), (153, 46499), (156, 46547), (160, 46565), (161, 46571),

Gene: Jinkies_3 Start: 2349, Stop: 3125, Start Num: 34
Candidate Starts for Jinkies_3:
(Start: 34 @2349 has 1 MA's), (49, 2442), (52, 2448), (Start: 55 @2478 has 1 MA's), (58, 2493), (78, 2571), (100, 2616), (107, 2649), (109, 2670), (111, 2676), (113, 2685), (117, 2700), (126, 2784), (127,

2793), (137, 2871), (146, 2952), (147, 2955), (153, 3015), (157, 3072),

Gene: Juno112_42 Start: 27172, Stop: 27969, Start Num: 35
Candidate Starts for Juno112_42:
(Start: 35 @27172 has 18 MA's), (48, 27238), (49, 27253), (Start: 55 @27289 has 1 MA's), (66, 27337), (69, 27349), (72, 27355), (119, 27571), (121, 27577), (139, 27745), (146, 27820), (147, 27823), (156, 27931), (157, 27940),

Gene: Keitabear_5 Start: 4089, Stop: 5051, Start Num: 26
Candidate Starts for Keitabear_5:
(1, 3228), (2, 3420), (3, 3450), (4, 3477), (5, 3513), (6, 3549), (7, 3666), (8, 3678), (9, 3765), (11, 3807), (12, 3819), (13, 3825), (22, 3969), (23, 3993), (Start: 26 @4089 has 2 MA's), (29, 4110), (50, 4245), (Start: 71 @4350 has 1 MA's), (85, 4446), (110, 4614), (115, 4635), (122, 4656), (146, 4905), (147, 4908), (148, 4911), (154, 4989),

Gene: KendraB23_51 Start: 28732, Stop: 29547, Start Num: 72
Candidate Starts for KendraB23_51:
(Start: 35 @28549 has 18 MA's), (49, 28630), (Start: 55 @28666 has 1 MA's), (66, 28714), (72, 28732), (Start: 79 @28825 has 4 MA's), (82, 28843), (83, 28873), (88, 28945), (97, 29011), (119, 29158), (121, 29164), (125, 29230), (139, 29332), (146, 29407), (147, 29410), (157, 29527),

Gene: Kingsley_71 Start: 46661, Stop: 47491, Start Num: 18
Candidate Starts for Kingsley_71:
(10, 46526), (14, 46583), (15, 46607), (16, 46625), (17, 46640), (Start: 18 @46661 has 1 MA's), (95, 46967), (99, 46988), (120, 47090), (146, 47339), (147, 47342), (150, 47372), (153, 47399), (161, 47480),

Gene: Laphuphu24k_41 Start: 27156, Stop: 27953, Start Num: 35
Candidate Starts for Laphuphu24k_41:
(Start: 35 @27156 has 18 MA's), (48, 27222), (49, 27237), (Start: 55 @27273 has 1 MA's), (66, 27321), (69, 27333), (72, 27339), (119, 27555), (121, 27561), (139, 27729), (146, 27804), (147, 27807), (156, 27915), (157, 27924),

Gene: Lennon_5 Start: 3295, Stop: 4143, Start Num: 26
Candidate Starts for Lennon_5:
(1, 2434), (2, 2626), (3, 2656), (4, 2683), (5, 2719), (6, 2755), (7, 2872), (8, 2884), (9, 2971), (11, 3013), (12, 3025), (13, 3031), (22, 3175), (23, 3199), (Start: 26 @3295 has 2 MA's), (29, 3316), (50, 3451), (Start: 71 @3556 has 1 MA's), (85, 3652), (110, 3820), (122, 3862), (146, 3997), (147, 4000), (148, 4003), (154, 4081),

Gene: Leona_42 Start: 27237, Stop: 28046, Start Num: 35
Candidate Starts for Leona_42:
(Start: 35 @27237 has 18 MA's), (48, 27303), (49, 27318), (Start: 55 @27354 has 1 MA's), (66, 27402), (69, 27414), (72, 27420), (121, 27654), (122, 27657), (131, 27759), (139, 27822), (146, 27897), (147, 27900), (157, 28017),

Gene: McKinley_5 Start: 3198, Stop: 3983, Start Num: 62
Candidate Starts for McKinley_5:
(54, 3156), (57, 3165), (Start: 62 @3198 has 1 MA's), (65, 3204), (70, 3228), (85, 3327), (110, 3495), (115, 3516), (122, 3537), (146, 3786), (147, 3789), (148, 3792), (149, 3810), (152, 3873), (154, 3921),

Gene: Niblet_40 Start: 27937, Stop: 28935, Start Num: 35
Candidate Starts for Niblet_40:

(Start: 35 @27937 has 18 MA's), (49, 28018), (Start: 55 @28054 has 1 MA's), (72, 28120), (Start: 79 @28213 has 4 MA's), (83, 28261), (87, 28327), (88, 28333), (103, 28441), (104, 28447), (108, 28459), (119, 28546), (121, 28552), (122, 28555), (125, 28618), (139, 28720), (143, 28747), (146, 28795), (147, 28798), (157, 28915),

Gene: Oppalora_42 Start: 27170, Stop: 27967, Start Num: 35
Candidate Starts for Oppalora_42:
(Start: 35 @27170 has 18 MA's), (48, 27236), (49, 27251), (Start: 55 @27287 has 1 MA's), (66, 27335), (69, 27347), (72, 27353), (119, 27569), (121, 27575), (139, 27743), (146, 27818), (147, 27821), (156, 27929), (157, 27938),

Gene: Orcanus_41 Start: 28182, Stop: 28904, Start Num: 79
Candidate Starts for Orcanus_41:
(Start: 35 @27906 has 18 MA's), (49, 27987), (Start: 55 @28023 has 1 MA's), (66, 28071), (72, 28089), (Start: 79 @28182 has 4 MA's), (82, 28200), (83, 28230), (88, 28302), (116, 28503), (119, 28515), (121, 28521), (122, 28524), (125, 28587), (139, 28689), (146, 28764), (147, 28767), (157, 28884),

Gene: Ovechkin_70 Start: 44498, Stop: 45319, Start Num: 47
Candidate Starts for Ovechkin_70:
(10, 44057), (14, 44114), (15, 44138), (16, 44156), (17, 44171), (Start: 18 @44192 has 1 MA's), (19, 44210), (20, 44225), (21, 44243), (Start: 47 @44498 has 2 MA's), (49, 44519), (59, 44579), (84, 44735), (120, 44927), (138, 45089), (146, 45167), (147, 45170), (150, 45200), (153, 45227), (161, 45308),

Gene: Pelletreau_50 Start: 28545, Stop: 29360, Start Num: 72
Candidate Starts for Pelletreau_50:
(Start: 35 @28362 has 18 MA's), (49, 28443), (Start: 55 @28479 has 1 MA's), (66, 28527), (72, 28545), (Start: 79 @28638 has 4 MA's), (82, 28656), (83, 28686), (88, 28758), (97, 28824), (119, 28971), (121, 28977), (125, 29043), (139, 29145), (146, 29220), (147, 29223), (157, 29340),

Gene: PhlipPhlop_69 Start: 47844, Stop: 48557, Start Num: 47
Candidate Starts for PhlipPhlop_69:
(10, 47481), (14, 47538), (16, 47580), (17, 47595), (Start: 18 @47616 has 1 MA's), (24, 47697), (Start: 47 @47844 has 2 MA's), (49, 47865), (59, 47925), (120, 48165), (146, 48405), (147, 48408), (150, 48438), (153, 48465), (161, 48546),

Gene: PhluffyCoco_43 Start: 27444, Stop: 28064, Start Num: 86
Candidate Starts for PhluffyCoco_43:
(Start: 35 @27168 has 18 MA's), (48, 27234), (49, 27249), (Start: 55 @27285 has 1 MA's), (66, 27333), (69, 27345), (72, 27351), (77, 27375), (Start: 86 @27444 has 2 MA's), (89, 27462), (119, 27666), (121, 27672), (139, 27840), (146, 27915), (147, 27918), (156, 28026), (157, 28035),

Gene: Poenanya_74 Start: 45998, Stop: 46735, Start Num: 37
Candidate Starts for Poenanya_74:
(Start: 37 @45998 has 5 MA's), (Start: 47 @46055 has 2 MA's), (51, 46079), (53, 46097), (Start: 55 @46112 has 1 MA's), (60, 46133), (68, 46166), (75, 46184), (120, 46343), (138, 46505), (146, 46583), (147, 46586), (149, 46607), (150, 46616), (153, 46643), (161, 46724),

Gene: Rattail_43 Start: 27437, Stop: 28150, Start Num: 72
Candidate Starts for Rattail_43:
(Start: 35 @27254 has 18 MA's), (48, 27320), (49, 27335), (Start: 55 @27371 has 1 MA's), (66, 27419), (69, 27431), (72, 27437), (77, 27461), (Start: 86 @27530 has 2 MA's), (89, 27548), (119, 27752), (121, 27758), (139, 27926), (146, 28001), (147, 28004), (156, 28112), (157, 28121),

Gene: RedBird_72 Start: 44502, Stop: 45227, Start Num: 37
Candidate Starts for RedBird_72:
(Start: 37 @44502 has 5 MA's), (Start: 47 @44559 has 2 MA's), (51, 44583), (53, 44589), (Start: 55 @44604 has 1 MA's), (60, 44625), (68, 44658), (75, 44676), (120, 44835), (138, 44997), (146, 45075), (147, 45078), (149, 45099), (150, 45108), (153, 45135), (161, 45216),

Gene: RedFox_43 Start: 27443, Stop: 28063, Start Num: 86
Candidate Starts for RedFox_43:
(Start: 35 @27167 has 18 MA's), (48, 27233), (49, 27248), (Start: 55 @27284 has 1 MA's), (66, 27332), (69, 27344), (72, 27350), (77, 27374), (Start: 86 @27443 has 2 MA's), (89, 27461), (119, 27665), (121, 27671), (139, 27839), (146, 27914), (147, 27917), (156, 28025), (157, 28034),

Gene: Samy_50 Start: 33615, Stop: 34364, Start Num: 80
Candidate Starts for Samy_50:
(33, 33303), (40, 33345), (52, 33414), (Start: 55 @33444 has 1 MA's), (64, 33483), (Start: 80 @33615 has 1 MA's), (81, 33618), (82, 33621), (91, 33735), (101, 33819), (102, 33822), (119, 33933), (135, 34071), (139, 34122), (143, 34152), (147, 34203), (149, 34224), (153, 34260), (154, 34281), (155, 34284), (158, 34320),

Gene: Sedona_6 Start: 4350, Stop: 5051, Start Num: 71
Candidate Starts for Sedona_6:
(1, 3228), (2, 3420), (3, 3450), (4, 3477), (5, 3513), (6, 3549), (7, 3666), (8, 3678), (9, 3765), (11, 3807), (12, 3819), (13, 3825), (22, 3969), (23, 3993), (Start: 26 @4089 has 2 MA's), (29, 4110), (50, 4245), (Start: 71 @4350 has 1 MA's), (85, 4446), (110, 4614), (115, 4635), (122, 4656), (146, 4905), (147, 4908), (148, 4911), (154, 4989),

Gene: Shen_38 Start: 26739, Stop: 27461, Start Num: 79
Candidate Starts for Shen_38:
(Start: 35 @26463 has 18 MA's), (49, 26544), (Start: 55 @26580 has 1 MA's), (66, 26628), (72, 26646), (Start: 79 @26739 has 4 MA's), (82, 26757), (83, 26787), (88, 26859), (97, 26925), (119, 27072), (121, 27078), (125, 27144), (139, 27246), (146, 27321), (147, 27324), (157, 27441),

Gene: Shivanishola_4 Start: 2785, Stop: 3819, Start Num: 25
Candidate Starts for Shivanishola_4:
(Start: 25 @2785 has 2 MA's), (27, 2821), (38, 2884), (41, 2899), (Start: 43 @2920 has 1 MA's), (46, 2938), (50, 2962), (Start: 71 @3067 has 1 MA's), (85, 3163), (110, 3331), (115, 3352), (122, 3373), (146, 3622), (147, 3625), (148, 3628), (149, 3646), (152, 3709), (154, 3757),

Gene: StuartMinion_35 Start: 24235, Stop: 25020, Start Num: 35
Candidate Starts for StuartMinion_35:
(Start: 35 @24235 has 18 MA's), (42, 24274), (48, 24301), (Start: 55 @24352 has 1 MA's), (58, 24367), (63, 24388), (66, 24400), (72, 24418), (92, 24430), (105, 24526), (121, 24625), (124, 24676), (134, 24745), (139, 24796), (144, 24844), (146, 24871), (147, 24874), (155, 24958), (157, 24991), (159, 25003),

Gene: TaylorSipht_41 Start: 27587, Stop: 28306, Start Num: 79
Candidate Starts for TaylorSipht_41:
(Start: 35 @27311 has 18 MA's), (49, 27392), (Start: 55 @27428 has 1 MA's), (Start: 79 @27587 has 4 MA's), (82, 27605), (83, 27635), (88, 27707), (121, 27923), (132, 28034), (139, 28091), (146, 28166), (147, 28169), (157, 28286),

Gene: Toad24_43 Start: 28602, Stop: 29600, Start Num: 35

Candidate Starts for Toad24_43:
(Start: 35 @28602 has 18 MA's), (49, 28683), (Start: 55 @28719 has 1 MA's), (66, 28767), (72, 28785), (Start: 79 @28878 has 4 MA's), (82, 28896), (83, 28926), (88, 28998), (97, 29064), (119, 29211), (121, 29217), (125, 29283), (139, 29385), (146, 29460), (147, 29463), (157, 29580),

Gene: Westrich_49 Start: 28469, Stop: 29284, Start Num: 72
Candidate Starts for Westrich_49:
(Start: 35 @28286 has 18 MA's), (49, 28367), (Start: 55 @28403 has 1 MA's), (66, 28451), (72, 28469), (Start: 79 @28562 has 4 MA's), (82, 28580), (83, 28610), (88, 28682), (97, 28748), (119, 28895), (121, 28901), (125, 28967), (139, 29069), (146, 29144), (147, 29147), (157, 29264),

Gene: WileyE_42 Start: 27504, Stop: 28385, Start Num: 35
Candidate Starts for WileyE_42:
(Start: 35 @27504 has 18 MA's), (49, 27585), (Start: 55 @27621 has 1 MA's), (66, 27669), (88, 27783), (119, 27996), (121, 28002), (122, 28005), (125, 28068), (139, 28170), (146, 28245), (147, 28248), (157, 28365),

Gene: Zixiang_40 Start: 27967, Stop: 28965, Start Num: 35
Candidate Starts for Zixiang_40:
(Start: 35 @27967 has 18 MA's), (49, 28048), (Start: 55 @28084 has 1 MA's), (66, 28132), (72, 28150), (Start: 79 @28243 has 4 MA's), (82, 28261), (83, 28291), (88, 28363), (97, 28429), (119, 28576), (121, 28582), (125, 28648), (139, 28750), (146, 28825), (147, 28828), (157, 28945),