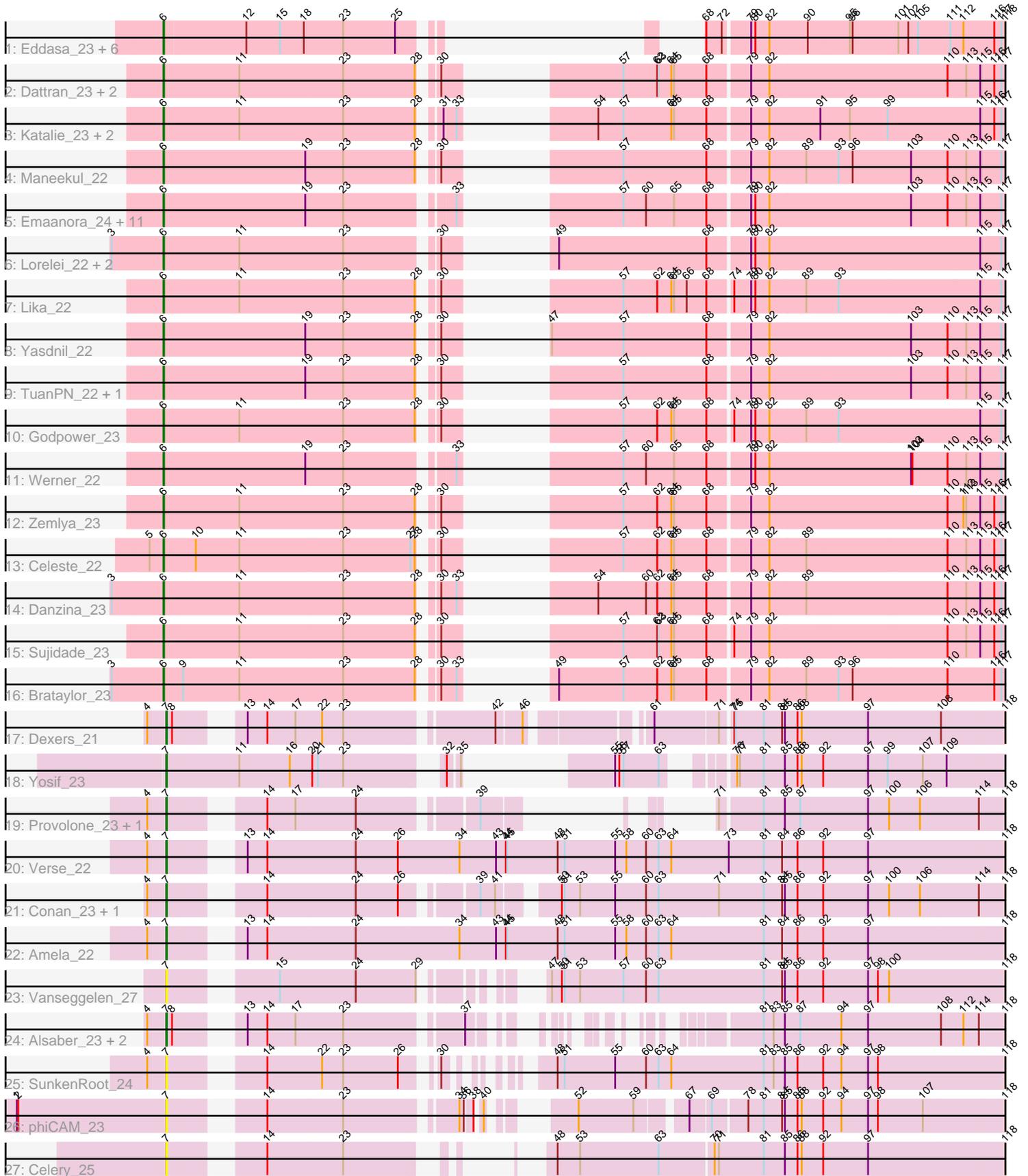# Zoomed Pham 289459

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 289459 Report

This analysis was run 03/28/26 on database version 641.

Pham number 289459 has 55 members, 6 are drafts.

Phages represented in each track:
• Track 1 : Eddasa_23, Izzy_23, EnochSoames_24, Oliynyk_23, Jash_23, Rusticus_23, BryanRecycles_23
• Track 2 : Dattran_23, Goby_22, Toma_22
• Track 3 : Katalie_23, RedBear_24, South40_23
• Track 4 : Maneekul_22
• Track 5 : Emaanora_24, TagePhighter_23, BarryBee_24, Asten_22, Triste_22, OzzyJ_23, Hippo_22, Dwayne_22, SarahRose_22, Chucky_22, Whatever_22, Snorlax_22
• Track 6 : Lorelei_22, Rana_22, Nabi_22
• Track 7 : Lika_22
• Track 8 : Yasdnil_22
• Track 9 : TuanPN_22, Ejemplo_22
• Track 10 : Godpower_23
• Track 11 : Werner_22
• Track 12 : Zemlya_23
• Track 13 : Celeste_22
• Track 14 : Danzina_23
• Track 15 : Sujidade_23
• Track 16 : Brataylor_23
• Track 17 : Dexers_21
• Track 18 : Yosif_23
• Track 19 : Provolone_23, ElGato_23
• Track 20 : Verse_22
• Track 21 : Conan_23, Pavo_23
• Track 22 : Amela_22
• Track 23 : Vanseggelen_27
• Track 24 : Alsaber_23, Sudan_23, Kaine_22
• Track 25 : SunkenRoot_24
• Track 26 : phiCAM_23
• Track 27 : Celery_25


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

The start number called the most often in the published annotations is 6, it was called in 39 of the 49 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Asten_22, BarryBee_24, Brataylor_23, BryanRecycles_23, Celeste_22, Chucky_22, Danzina_23, Dattran_23, Dwayne_22, Eddasa_23, Ejemplo_22, Emaanora_24, EnochSoames_24, Goby_22, Godpower_23, Hippo_22, Izzy_23, Jash_23, Katalie_23, Lika_22, Lorelei_22, Maneekul_22, Nabi_22, Oliynyk_23, OzzyJ_23, Rana_22, RedBear_24, Rusticus_23, SarahRose_22, Snorlax_22, South40_23, Sujidade_23, TagePhighter_23, Toma_22, Triste_22, TuanPN_22, Werner_22, Whatever_22, Yasdnil_22, Zemlya_23,

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

Genes that do not have the "Most Annotated" start:
• Alsaber_23, Amela_22, Celery_25, Conan_23, Dexers_21, ElGato_23, Kaine_22, Pavo_23, Provolone_23, Sudan_23, SunkenRoot_24, Vanseggelen_27, Verse_22, Yosif_23, phiCAM_23,

**Summary by start number:**

Start 6:
• Found in 40 of 55 ( 72.7% ) of genes in pham
• Manual Annotations of this start: 39 of 49
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Asten_22 (BD1), BarryBee_24 (BD1), Brataylor_23 (BD1), BryanRecycles_23 (BD1), Celeste_22 (BD1), Chucky_22 (BD1), Danzina_23 (BD1), Dattran_23 (BD1), Dwayne_22 (BD1), Eddasa_23 (BD1), Ejemplo_22 (BD1), Emaanora_24 (BD1), EnochSoames_24 (BD1), Goby_22 (BD1), Godpower_23 (BD1), Hippo_22 (BD1), Izzy_23 (BD1), Jash_23 (BD1), Katalie_23 (BD1), Lika_22 (BD1), Lorelei_22 (BD1), Maneekul_22 (BD1), Nabi_22 (BD1), Oliynyk_23 (BD1), OzzyJ_23 (BD1), Rana_22 (BD1), RedBear_24 (BD1), Rusticus_23 (BD1), SarahRose_22 (BD1), Snorlax_22 (BD1), South40_23 (BD1), Sujidade_23 (BD1), TagePhighter_23 (BD1), Toma_22 (BD1), Triste_22 (BD1), TuanPN_22 (BD1), Werner_22 (BD1), Whatever_22 (BD1), Yasdnil_22 (BD1), Zemlya_23 (BD1),

Start 7:
• Found in 15 of 55 ( 27.3% ) of genes in pham
• Manual Annotations of this start: 10 of 49
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alsaber_23 (BD3), Amela_22 (BD3), Celery_25 (BD3), Conan_23 (BD3), Dexers_21 (BD3), ElGato_23 (BD3), Kaine_22 (BD3), Pavo_23 (BD3), Provolone_23 (BD3), Sudan_23 (BD3), SunkenRoot_24 (BD3), Vanseggelen_27 (BD3), Verse_22 (BD3), Yosif_23 (BD3), phiCAM_23 (BD3),

**Summary by clusters:**

There are 2 clusters represented in this pham: BD1, BD3,

Info for manual annotations of cluster BD1:
•Start number 6 was manually annotated 39 times for cluster BD1.

Info for manual annotations of cluster BD3:
•Start number 7 was manually annotated 10 times for cluster BD3.


## *Gene Information:*

Gene: Alsaber_23 Start: 18064, Stop: 19866, Start Num: 7
Candidate Starts for Alsaber_23:
(4, 18025), (Start: 7 @18064 has 10 MA's), (8, 18076), (13, 18172), (14, 18214), (17, 18274), (23, 18373), (37, 18589), (81, 18904), (83, 18925), (85, 18949), (87, 18982), (94, 19069), (97, 19126), (108, 19279), (112, 19327), (114, 19360), (118, 19414), (134, 19696), (137, 19738), (141, 19771),

Gene: Amela_22 Start: 18357, Stop: 20531, Start Num: 7
Candidate Starts for Amela_22:
(4, 18318), (Start: 7 @18357 has 10 MA's), (13, 18465), (14, 18507), (24, 18693), (34, 18912), (43, 18990), (44, 19011), (45, 19014), (48, 19122), (51, 19137), (55, 19245), (58, 19269), (60, 19311), (63, 19338), (64, 19365), (81, 19563), (84, 19602), (86, 19635), (92, 19689), (97, 19785), (118, 20073), (129, 20292), (134, 20355), (137, 20397), (141, 20436),

Gene: Asten_22 Start: 17336, Stop: 19312, Start Num: 6
Candidate Starts for Asten_22:
(Start: 6 @17336 has 39 MA's), (19, 17639), (23, 17717), (33, 17915), (57, 18080), (60, 18125), (65, 18185), (68, 18251), (79, 18332), (80, 18341), (82, 18371), (103, 18665), (110, 18743), (113, 18782), (115, 18812), (117, 18854), (119, 18881), (124, 19034), (132, 19112), (133, 19133), (135, 19148), (136, 19157), (137, 19187), (140, 19211),

Gene: BarryBee_24 Start: 17346, Stop: 19322, Start Num: 6
Candidate Starts for BarryBee_24:
(Start: 6 @17346 has 39 MA's), (19, 17649), (23, 17727), (33, 17925), (57, 18090), (60, 18135), (65, 18195), (68, 18261), (79, 18342), (80, 18351), (82, 18381), (103, 18675), (110, 18753), (113, 18792), (115, 18822), (117, 18864), (119, 18891), (124, 19044), (132, 19122), (133, 19143), (135, 19158), (136, 19167), (137, 19197), (140, 19221),

Gene: Brataylor_23 Start: 17360, Stop: 19348, Start Num: 6
Candidate Starts for Brataylor_23:
(3, 17252), (Start: 6 @17360 has 39 MA's), (9, 17396), (11, 17516), (23, 17735), (28, 17888), (30, 17909), (33, 17942), (49, 17972), (57, 18110), (62, 18179), (64, 18209), (65, 18215), (68, 18284), (79, 18365), (82, 18404), (89, 18482), (93, 18545), (96, 18575), (110, 18776), (116, 18872), (117, 18887), (119, 18914), (123, 19028), (133, 19166), (137, 19220), (143, 19280),

Gene: BryanRecycles_23 Start: 17521, Stop: 19164, Start Num: 6
Candidate Starts for BryanRecycles_23:
(Start: 6 @17521 has 39 MA's), (12, 17692), (15, 17764), (18, 17815), (23, 17896), (25, 18007), (68, 18103), (72, 18136), (79, 18184), (80, 18193), (82, 18223), (90, 18304), (95, 18388), (96, 18394), (101, 18490), (102, 18511), (105, 18532), (111, 18601), (112, 18628), (116, 18691), (117, 18706), (118, 18715), (119, 18733), (122, 18829), (127, 18925), (130, 18943), (131, 18952), (133, 18985), (137, 19039), (138, 19045),

Gene: Celery_25 Start: 18018, Stop: 19919, Start Num: 7
Candidate Starts for Celery_25:

(Start: 7 @18018 has 10 MA's), (14, 18168), (23, 18327), (48, 18528), (53, 18576), (63, 18744), (70, 18855), (71, 18864), (81, 18960), (85, 19005), (86, 19032), (88, 19041), (92, 19086), (97, 19182), (118, 19470), (125, 19662), (126, 19668), (134, 19749),

Gene: Celeste_22 Start: 17352, Stop: 19334, Start Num: 6
Candidate Starts for Celeste_22:
(5, 17322), (Start: 6 @17352 has 39 MA's), (10, 17412), (11, 17505), (23, 17724), (27, 17868), (28, 17877), (30, 17898), (57, 18099), (62, 18168), (64, 18198), (65, 18204), (68, 18273), (79, 18354), (82, 18393), (89, 18471), (110, 18765), (113, 18804), (115, 18834), (116, 18861), (117, 18876), (119, 18903), (120, 18909), (122, 18999), (124, 19056), (132, 19134), (133, 19155), (135, 19170), (137, 19209), (140, 19233), (146, 19320),

Gene: Chucky_22 Start: 17347, Stop: 19323, Start Num: 6
Candidate Starts for Chucky_22:
(Start: 6 @17347 has 39 MA's), (19, 17650), (23, 17728), (33, 17926), (57, 18091), (60, 18136), (65, 18196), (68, 18262), (79, 18343), (80, 18352), (82, 18382), (103, 18676), (110, 18754), (113, 18793), (115, 18823), (117, 18865), (119, 18892), (124, 19045), (132, 19123), (133, 19144), (135, 19159), (136, 19168), (137, 19198), (140, 19222),

Gene: Conan_23 Start: 17786, Stop: 19858, Start Num: 7
Candidate Starts for Conan_23:
(4, 17747), (Start: 7 @17786 has 10 MA's), (14, 17936), (24, 18122), (26, 18212), (39, 18332), (41, 18362), (50, 18461), (51, 18467), (53, 18500), (55, 18575), (60, 18641), (63, 18668), (71, 18794), (81, 18890), (84, 18929), (85, 18935), (86, 18962), (92, 19016), (97, 19112), (100, 19157), (106, 19223), (114, 19346), (118, 19400), (129, 19619), (134, 19682), (137, 19724), (141, 19763),

Gene: Danzina_23 Start: 17562, Stop: 19547, Start Num: 6
Candidate Starts for Danzina_23:
(3, 17454), (Start: 6 @17562 has 39 MA's), (11, 17718), (23, 17937), (28, 18090), (30, 18111), (33, 18144), (54, 18258), (60, 18357), (62, 18381), (64, 18411), (65, 18417), (68, 18486), (79, 18567), (82, 18606), (89, 18684), (110, 18978), (113, 19017), (115, 19047), (116, 19074), (117, 19089), (119, 19116), (120, 19122), (122, 19212), (124, 19269), (132, 19347), (133, 19368), (135, 19383), (137, 19422), (140, 19446), (146, 19533),

Gene: Dattran_23 Start: 17351, Stop: 19336, Start Num: 6
Candidate Starts for Dattran_23:
(Start: 6 @17351 has 39 MA's), (11, 17507), (23, 17726), (28, 17879), (30, 17900), (57, 18101), (62, 18170), (63, 18173), (64, 18200), (65, 18206), (68, 18275), (79, 18356), (82, 18395), (110, 18767), (113, 18806), (115, 18836), (116, 18863), (117, 18878), (119, 18905), (120, 18911), (124, 19058), (132, 19136), (133, 19157), (135, 19172), (137, 19211), (140, 19235),

Gene: Dexers_21 Start: 17767, Stop: 19797, Start Num: 7
Candidate Starts for Dexers_21:
(4, 17728), (Start: 7 @17767 has 10 MA's), (8, 17779), (13, 17875), (14, 17917), (17, 17977), (22, 18031), (23, 18076), (42, 18358), (46, 18409), (61, 18622), (71, 18751), (74, 18772), (75, 18775), (81, 18835), (84, 18874), (85, 18880), (86, 18907), (88, 18916), (97, 19057), (108, 19210), (118, 19345), (122, 19459), (134, 19627), (137, 19669), (141, 19702),

Gene: Dwayne_22 Start: 17343, Stop: 19310, Start Num: 6
Candidate Starts for Dwayne_22:
(Start: 6 @17343 has 39 MA's), (19, 17637), (23, 17715), (33, 17913), (57, 18078), (60, 18123), (65, 18183), (68, 18249), (79, 18330), (80, 18339), (82, 18369), (103, 18663), (110, 18741), (113, 18780), (115, 18810), (117, 18852), (119, 18879), (124, 19032), (132, 19110), (133, 19131), (135, 19146),

(136, 19155), (137, 19185), (140, 19209),

Gene: Eddasa_23 Start: 17521, Stop: 19164, Start Num: 6
Candidate Starts for Eddasa_23:
(Start: 6 @17521 has 39 MA's), (12, 17692), (15, 17764), (18, 17815), (23, 17896), (25, 18007), (68, 18103), (72, 18136), (79, 18184), (80, 18193), (82, 18223), (90, 18304), (95, 18388), (96, 18394), (101, 18490), (102, 18511), (105, 18532), (111, 18601), (112, 18628), (116, 18691), (117, 18706), (118, 18715), (119, 18733), (122, 18829), (127, 18925), (130, 18943), (131, 18952), (133, 18985), (137, 19039), (138, 19045),

Gene: Ejemplo_22 Start: 17343, Stop: 19334, Start Num: 6
Candidate Starts for Ejemplo_22:
(Start: 6 @17343 has 39 MA's), (19, 17646), (23, 17724), (28, 17877), (30, 17898), (57, 18099), (68, 18273), (79, 18354), (82, 18393), (103, 18687), (110, 18765), (113, 18804), (115, 18834), (117, 18876), (119, 18903), (120, 18909), (123, 19017), (132, 19134), (133, 19155), (135, 19170), (136, 19179), (137, 19209), (140, 19233),

Gene: ElGato_23 Start: 17789, Stop: 19504, Start Num: 7
Candidate Starts for ElGato_23:
(4, 17750), (Start: 7 @17789 has 10 MA's), (14, 17939), (17, 17999), (24, 18125), (39, 18335), (71, 18452), (81, 18536), (85, 18581), (87, 18614), (97, 18758), (100, 18803), (106, 18869), (114, 18992), (118, 19046), (129, 19265), (134, 19328), (137, 19370), (141, 19409),

Gene: Emaanora_24 Start: 17346, Stop: 19322, Start Num: 6
Candidate Starts for Emaanora_24:
(Start: 6 @17346 has 39 MA's), (19, 17649), (23, 17727), (33, 17925), (57, 18090), (60, 18135), (65, 18195), (68, 18261), (79, 18342), (80, 18351), (82, 18381), (103, 18675), (110, 18753), (113, 18792), (115, 18822), (117, 18864), (119, 18891), (124, 19044), (132, 19122), (133, 19143), (135, 19158), (136, 19167), (137, 19197), (140, 19221),

Gene: EnochSoames_24 Start: 17517, Stop: 19160, Start Num: 6
Candidate Starts for EnochSoames_24:
(Start: 6 @17517 has 39 MA's), (12, 17688), (15, 17760), (18, 17811), (23, 17892), (25, 18003), (68, 18099), (72, 18132), (79, 18180), (80, 18189), (82, 18219), (90, 18300), (95, 18384), (96, 18390), (101, 18486), (102, 18507), (105, 18528), (111, 18597), (112, 18624), (116, 18687), (117, 18702), (118, 18711), (119, 18729), (122, 18825), (127, 18921), (130, 18939), (131, 18948), (133, 18981), (137, 19035), (138, 19041),

Gene: Goby_22 Start: 17357, Stop: 19342, Start Num: 6
Candidate Starts for Goby_22:
(Start: 6 @17357 has 39 MA's), (11, 17513), (23, 17732), (28, 17885), (30, 17906), (57, 18107), (62, 18176), (63, 18179), (64, 18206), (65, 18212), (68, 18281), (79, 18362), (82, 18401), (110, 18773), (113, 18812), (115, 18842), (116, 18869), (117, 18884), (119, 18911), (120, 18917), (124, 19064), (132, 19142), (133, 19163), (135, 19178), (137, 19217), (140, 19241),

Gene: Godpower_23 Start: 17368, Stop: 19353, Start Num: 6
Candidate Starts for Godpower_23:
(Start: 6 @17368 has 39 MA's), (11, 17524), (23, 17743), (28, 17896), (30, 17917), (57, 18118), (62, 18187), (64, 18217), (65, 18223), (68, 18292), (74, 18340), (79, 18373), (80, 18382), (82, 18412), (89, 18490), (93, 18553), (115, 18853), (117, 18895), (119, 18922), (123, 19036), (132, 19153), (133, 19174), (135, 19189), (137, 19228), (140, 19252), (142, 19261),

Gene: Hippo_22 Start: 17346, Stop: 19322, Start Num: 6

Candidate Starts for Hippo_22:
(Start: 6 @17346 has 39 MA's), (19, 17649), (23, 17727), (33, 17925), (57, 18090), (60, 18135), (65, 18195), (68, 18261), (79, 18342), (80, 18351), (82, 18381), (103, 18675), (110, 18753), (113, 18792), (115, 18822), (117, 18864), (119, 18891), (124, 19044), (132, 19122), (133, 19143), (135, 19158), (136, 19167), (137, 19197), (140, 19221),

Gene: Izzy_23 Start: 17568, Stop: 19211, Start Num: 6
Candidate Starts for Izzy_23:
(Start: 6 @17568 has 39 MA's), (12, 17739), (15, 17811), (18, 17862), (23, 17943), (25, 18054), (68, 18150), (72, 18183), (79, 18231), (80, 18240), (82, 18270), (90, 18351), (95, 18435), (96, 18441), (101, 18537), (102, 18558), (105, 18579), (111, 18648), (112, 18675), (116, 18738), (117, 18753), (118, 18762), (119, 18780), (122, 18876), (127, 18972), (130, 18990), (131, 18999), (133, 19032), (137, 19086), (138, 19092),

Gene: Jash_23 Start: 17521, Stop: 19164, Start Num: 6
Candidate Starts for Jash_23:
(Start: 6 @17521 has 39 MA's), (12, 17692), (15, 17764), (18, 17815), (23, 17896), (25, 18007), (68, 18103), (72, 18136), (79, 18184), (80, 18193), (82, 18223), (90, 18304), (95, 18388), (96, 18394), (101, 18490), (102, 18511), (105, 18532), (111, 18601), (112, 18628), (116, 18691), (117, 18706), (118, 18715), (119, 18733), (122, 18829), (127, 18925), (130, 18943), (131, 18952), (133, 18985), (137, 19039), (138, 19045),

Gene: Kaine_22 Start: 17767, Stop: 19569, Start Num: 7
Candidate Starts for Kaine_22:
(4, 17728), (Start: 7 @17767 has 10 MA's), (8, 17779), (13, 17875), (14, 17917), (17, 17977), (23, 18076), (37, 18292), (81, 18607), (83, 18628), (85, 18652), (87, 18685), (94, 18772), (97, 18829), (108, 18982), (112, 19030), (114, 19063), (118, 19117), (134, 19399), (137, 19441), (141, 19474),

Gene: Katalie_23 Start: 17609, Stop: 19588, Start Num: 6
Candidate Starts for Katalie_23:
(Start: 6 @17609 has 39 MA's), (11, 17771), (23, 17987), (28, 18140), (31, 18164), (33, 18185), (54, 18299), (57, 18353), (64, 18452), (65, 18458), (68, 18527), (79, 18608), (82, 18647), (91, 18755), (95, 18812), (99, 18893), (115, 19088), (116, 19115), (117, 19130), (119, 19157), (120, 19163), (123, 19271), (128, 19355), (132, 19388), (133, 19409), (137, 19463), (140, 19487),

Gene: Lika_22 Start: 17372, Stop: 19357, Start Num: 6
Candidate Starts for Lika_22:
(Start: 6 @17372 has 39 MA's), (11, 17528), (23, 17747), (28, 17900), (30, 17921), (57, 18122), (62, 18191), (64, 18221), (65, 18227), (66, 18254), (68, 18296), (74, 18344), (79, 18377), (80, 18386), (82, 18416), (89, 18494), (93, 18557), (115, 18857), (117, 18899), (119, 18926), (123, 19040), (132, 19157), (133, 19178), (135, 19193), (137, 19232), (140, 19256), (142, 19265),

Gene: Lorelei_22 Start: 17342, Stop: 19327, Start Num: 6
Candidate Starts for Lorelei_22:
(3, 17234), (Start: 6 @17342 has 39 MA's), (11, 17498), (23, 17717), (30, 17891), (49, 17954), (68, 18266), (79, 18347), (80, 18356), (82, 18386), (115, 18827), (117, 18869), (119, 18896), (120, 18902), (122, 18992), (123, 19010), (132, 19127), (133, 19148), (135, 19163), (136, 19172), (137, 19202), (140, 19226), (142, 19235),

Gene: Maneekul_22 Start: 17342, Stop: 19333, Start Num: 6
Candidate Starts for Maneekul_22:
(Start: 6 @17342 has 39 MA's), (19, 17645), (23, 17723), (28, 17876), (30, 17897), (57, 18098), (68, 18272), (79, 18353), (82, 18392), (89, 18470), (93, 18533), (96, 18563), (103, 18686), (110, 18764),

(113, 18803), (115, 18833), (117, 18875), (119, 18902), (120, 18908), (123, 19016), (132, 19133), (133, 19154), (135, 19169), (136, 19178), (137, 19208), (140, 19232),

Gene: Nabi_22 Start: 17342, Stop: 19327, Start Num: 6
Candidate Starts for Nabi_22:
(3, 17234), (Start: 6 @17342 has 39 MA's), (11, 17498), (23, 17717), (30, 17891), (49, 17954), (68, 18266), (79, 18347), (80, 18356), (82, 18386), (115, 18827), (117, 18869), (119, 18896), (120, 18902), (122, 18992), (123, 19010), (132, 19127), (133, 19148), (135, 19163), (136, 19172), (137, 19202), (140, 19226), (142, 19235),

Gene: Oliynyk_23 Start: 17521, Stop: 19164, Start Num: 6
Candidate Starts for Oliynyk_23:
(Start: 6 @17521 has 39 MA's), (12, 17692), (15, 17764), (18, 17815), (23, 17896), (25, 18007), (68, 18103), (72, 18136), (79, 18184), (80, 18193), (82, 18223), (90, 18304), (95, 18388), (96, 18394), (101, 18490), (102, 18511), (105, 18532), (111, 18601), (112, 18628), (116, 18691), (117, 18706), (118, 18715), (119, 18733), (122, 18829), (127, 18925), (130, 18943), (131, 18952), (133, 18985), (137, 19039), (138, 19045),

Gene: OzzyJ_23 Start: 17337, Stop: 19313, Start Num: 6
Candidate Starts for OzzyJ_23:
(Start: 6 @17337 has 39 MA's), (19, 17640), (23, 17718), (33, 17916), (57, 18081), (60, 18126), (65, 18186), (68, 18252), (79, 18333), (80, 18342), (82, 18372), (103, 18666), (110, 18744), (113, 18783), (115, 18813), (117, 18855), (119, 18882), (124, 19035), (132, 19113), (133, 19134), (135, 19149), (136, 19158), (137, 19188), (140, 19212),

Gene: Pavo_23 Start: 18059, Stop: 20131, Start Num: 7
Candidate Starts for Pavo_23:
(4, 18020), (Start: 7 @18059 has 10 MA's), (14, 18209), (24, 18395), (26, 18485), (39, 18605), (41, 18635), (50, 18734), (51, 18740), (53, 18773), (55, 18848), (60, 18914), (63, 18941), (71, 19067), (81, 19163), (84, 19202), (85, 19208), (86, 19235), (92, 19289), (97, 19385), (100, 19430), (106, 19496), (114, 19619), (118, 19673), (129, 19892), (134, 19955), (137, 19997), (141, 20036),

Gene: Provolone_23 Start: 17789, Stop: 19504, Start Num: 7
Candidate Starts for Provolone_23:
(4, 17750), (Start: 7 @17789 has 10 MA's), (14, 17939), (17, 17999), (24, 18125), (39, 18335), (71, 18452), (81, 18536), (85, 18581), (87, 18614), (97, 18758), (100, 18803), (106, 18869), (114, 18992), (118, 19046), (129, 19265), (134, 19328), (137, 19370), (141, 19409),

Gene: Rana_22 Start: 17342, Stop: 19327, Start Num: 6
Candidate Starts for Rana_22:
(3, 17234), (Start: 6 @17342 has 39 MA's), (11, 17498), (23, 17717), (30, 17891), (49, 17954), (68, 18266), (79, 18347), (80, 18356), (82, 18386), (115, 18827), (117, 18869), (119, 18896), (120, 18902), (122, 18992), (123, 19010), (132, 19127), (133, 19148), (135, 19163), (136, 19172), (137, 19202), (140, 19226), (142, 19235),

Gene: RedBear_24 Start: 17609, Stop: 19588, Start Num: 6
Candidate Starts for RedBear_24:
(Start: 6 @17609 has 39 MA's), (11, 17771), (23, 17987), (28, 18140), (31, 18164), (33, 18185), (54, 18299), (57, 18353), (64, 18452), (65, 18458), (68, 18527), (79, 18608), (82, 18647), (91, 18755), (95, 18812), (99, 18893), (115, 19088), (116, 19115), (117, 19130), (119, 19157), (120, 19163), (123, 19271), (128, 19355), (132, 19388), (133, 19409), (137, 19463), (140, 19487),

Gene: Rusticus_23 Start: 17521, Stop: 19164, Start Num: 6

Candidate Starts for Rusticus_23:
(Start: 6 @17521 has 39 MA's), (12, 17692), (15, 17764), (18, 17815), (23, 17896), (25, 18007), (68, 18103), (72, 18136), (79, 18184), (80, 18193), (82, 18223), (90, 18304), (95, 18388), (96, 18394), (101, 18490), (102, 18511), (105, 18532), (111, 18601), (112, 18628), (116, 18691), (117, 18706), (118, 18715), (119, 18733), (122, 18829), (127, 18925), (130, 18943), (131, 18952), (133, 18985), (137, 19039), (138, 19045),

Gene: SarahRose_22 Start: 17343, Stop: 19319, Start Num: 6
Candidate Starts for SarahRose_22:
(Start: 6 @17343 has 39 MA's), (19, 17646), (23, 17724), (33, 17922), (57, 18087), (60, 18132), (65, 18192), (68, 18258), (79, 18339), (80, 18348), (82, 18378), (103, 18672), (110, 18750), (113, 18789), (115, 18819), (117, 18861), (119, 18888), (124, 19041), (132, 19119), (133, 19140), (135, 19155), (136, 19164), (137, 19194), (140, 19218),

Gene: Snorlax_22 Start: 17346, Stop: 19322, Start Num: 6
Candidate Starts for Snorlax_22:
(Start: 6 @17346 has 39 MA's), (19, 17649), (23, 17727), (33, 17925), (57, 18090), (60, 18135), (65, 18195), (68, 18261), (79, 18342), (80, 18351), (82, 18381), (103, 18675), (110, 18753), (113, 18792), (115, 18822), (117, 18864), (119, 18891), (124, 19044), (132, 19122), (133, 19143), (135, 19158), (136, 19167), (137, 19197), (140, 19221),

Gene: South40_23 Start: 17609, Stop: 19588, Start Num: 6
Candidate Starts for South40_23:
(Start: 6 @17609 has 39 MA's), (11, 17771), (23, 17987), (28, 18140), (31, 18164), (33, 18185), (54, 18299), (57, 18353), (64, 18452), (65, 18458), (68, 18527), (79, 18608), (82, 18647), (91, 18755), (95, 18812), (99, 18893), (115, 19088), (116, 19115), (117, 19130), (119, 19157), (120, 19163), (123, 19271), (128, 19355), (132, 19388), (133, 19409), (137, 19463), (140, 19487),

Gene: Sudan_23 Start: 18054, Stop: 19856, Start Num: 7
Candidate Starts for Sudan_23:
(4, 18015), (Start: 7 @18054 has 10 MA's), (8, 18066), (13, 18162), (14, 18204), (17, 18264), (23, 18363), (37, 18579), (81, 18894), (83, 18915), (85, 18939), (87, 18972), (94, 19059), (97, 19116), (108, 19269), (112, 19317), (114, 19350), (118, 19404), (134, 19686), (137, 19728), (141, 19761),

Gene: Sujidade_23 Start: 17648, Stop: 19633, Start Num: 6
Candidate Starts for Sujidade_23:
(Start: 6 @17648 has 39 MA's), (11, 17804), (23, 18023), (28, 18176), (30, 18197), (57, 18398), (62, 18467), (63, 18470), (64, 18497), (65, 18503), (68, 18572), (74, 18620), (79, 18653), (82, 18692), (110, 19064), (113, 19103), (115, 19133), (116, 19160), (117, 19175), (119, 19202), (120, 19208), (122, 19298), (124, 19355), (132, 19433), (133, 19454), (135, 19469), (137, 19508), (140, 19532),

Gene: SunkenRoot_24 Start: 18350, Stop: 20338, Start Num: 7
Candidate Starts for SunkenRoot_24:
(4, 18311), (Start: 7 @18350 has 10 MA's), (14, 18500), (22, 18614), (23, 18659), (26, 18776), (30, 18824), (48, 18935), (51, 18950), (55, 19058), (60, 19124), (63, 19151), (64, 19178), (81, 19376), (83, 19397), (85, 19421), (86, 19448), (92, 19502), (94, 19541), (97, 19598), (98, 19619), (118, 19886), (134, 20168), (147, 20333),

Gene: TagePhighter_23 Start: 17346, Stop: 19322, Start Num: 6
Candidate Starts for TagePhighter_23:
(Start: 6 @17346 has 39 MA's), (19, 17649), (23, 17727), (33, 17925), (57, 18090), (60, 18135), (65, 18195), (68, 18261), (79, 18342), (80, 18351), (82, 18381), (103, 18675), (110, 18753), (113, 18792), (115, 18822), (117, 18864), (119, 18891), (124, 19044), (132, 19122), (133, 19143), (135, 19158),

(136, 19167), (137, 19197), (140, 19221),

Gene: Toma_22 Start: 17357, Stop: 19342, Start Num: 6
Candidate Starts for Toma_22:
(Start: 6 @17357 has 39 MA's), (11, 17513), (23, 17732), (28, 17885), (30, 17906), (57, 18107), (62, 18176), (63, 18179), (64, 18206), (65, 18212), (68, 18281), (79, 18362), (82, 18401), (110, 18773), (113, 18812), (115, 18842), (116, 18869), (117, 18884), (119, 18911), (120, 18917), (124, 19064), (132, 19142), (133, 19163), (135, 19178), (137, 19217), (140, 19241),

Gene: Triste_22 Start: 17337, Stop: 19313, Start Num: 6
Candidate Starts for Triste_22:
(Start: 6 @17337 has 39 MA's), (19, 17640), (23, 17718), (33, 17916), (57, 18081), (60, 18126), (65, 18186), (68, 18252), (79, 18333), (80, 18342), (82, 18372), (103, 18666), (110, 18744), (113, 18783), (115, 18813), (117, 18855), (119, 18882), (124, 19035), (132, 19113), (133, 19134), (135, 19149), (136, 19158), (137, 19188), (140, 19212),

Gene: TuanPN_22 Start: 17343, Stop: 19334, Start Num: 6
Candidate Starts for TuanPN_22:
(Start: 6 @17343 has 39 MA's), (19, 17646), (23, 17724), (28, 17877), (30, 17898), (57, 18099), (68, 18273), (79, 18354), (82, 18393), (103, 18687), (110, 18765), (113, 18804), (115, 18834), (117, 18876), (119, 18903), (120, 18909), (123, 19017), (132, 19134), (133, 19155), (135, 19170), (136, 19179), (137, 19209), (140, 19233),

Gene: Vanseggelen_27 Start: 17719, Stop: 19728, Start Num: 7
Candidate Starts for Vanseggelen_27:
(Start: 7 @17719 has 10 MA's), (15, 17896), (24, 18058), (29, 18184), (47, 18316), (50, 18337), (51, 18343), (53, 18376), (57, 18469), (60, 18517), (63, 18544), (81, 18769), (84, 18808), (85, 18814), (86, 18841), (92, 18895), (97, 18991), (98, 19012), (100, 19036), (118, 19279), (125, 19471), (126, 19477), (134, 19558), (142, 19636),

Gene: Verse_22 Start: 18351, Stop: 20525, Start Num: 7
Candidate Starts for Verse_22:
(4, 18312), (Start: 7 @18351 has 10 MA's), (13, 18459), (14, 18501), (24, 18687), (26, 18777), (34, 18906), (43, 18984), (44, 19005), (45, 19008), (48, 19116), (51, 19131), (55, 19239), (58, 19263), (60, 19305), (63, 19332), (64, 19359), (73, 19482), (81, 19557), (84, 19596), (86, 19629), (92, 19683), (97, 19779), (118, 20067), (129, 20286), (134, 20349), (137, 20391), (141, 20430),

Gene: Werner_22 Start: 17347, Stop: 19323, Start Num: 6
Candidate Starts for Werner_22:
(Start: 6 @17347 has 39 MA's), (19, 17650), (23, 17728), (33, 17926), (57, 18091), (60, 18136), (65, 18196), (68, 18262), (79, 18343), (80, 18352), (82, 18382), (103, 18676), (104, 18679), (110, 18754), (113, 18793), (115, 18823), (117, 18865), (119, 18892), (124, 19045), (132, 19123), (133, 19144), (135, 19159), (136, 19168), (137, 19198), (140, 19222),

Gene: Whatever_22 Start: 17347, Stop: 19323, Start Num: 6
Candidate Starts for Whatever_22:
(Start: 6 @17347 has 39 MA's), (19, 17650), (23, 17728), (33, 17926), (57, 18091), (60, 18136), (65, 18196), (68, 18262), (79, 18343), (80, 18352), (82, 18382), (103, 18676), (110, 18754), (113, 18793), (115, 18823), (117, 18865), (119, 18892), (124, 19045), (132, 19123), (133, 19144), (135, 19159), (136, 19168), (137, 19198), (140, 19222),

Gene: Yasdnil_22 Start: 17339, Stop: 19330, Start Num: 6
Candidate Starts for Yasdnil_22:

(Start: 6 @17339 has 39 MA's), (19, 17642), (23, 17720), (28, 17873), (30, 17894), (47, 17942), (57, 18095), (68, 18269), (79, 18350), (82, 18389), (103, 18683), (110, 18761), (113, 18800), (115, 18830), (117, 18872), (119, 18899), (120, 18905), (123, 19013), (132, 19130), (133, 19151), (135, 19166), (136, 19175), (137, 19205), (140, 19229),

Gene: Yosif_23 Start: 18289, Stop: 20154, Start Num: 7
Candidate Starts for Yosif_23:
(Start: 7 @18289 has 10 MA's), (11, 18442), (16, 18550), (20, 18595), (21, 18607), (23, 18661), (32, 18826), (35, 18847), (55, 18949), (56, 18958), (57, 18967), (63, 19042), (76, 19126), (77, 19132), (81, 19180), (85, 19225), (86, 19252), (88, 19261), (92, 19306), (97, 19402), (99, 19444), (107, 19519), (109, 19567), (134, 19972), (139, 20023), (145, 20113),

Gene: Zemlya_23 Start: 17368, Stop: 19353, Start Num: 6
Candidate Starts for Zemlya_23:
(Start: 6 @17368 has 39 MA's), (11, 17524), (23, 17743), (28, 17896), (30, 17917), (57, 18118), (62, 18187), (64, 18217), (65, 18223), (68, 18292), (79, 18373), (82, 18412), (110, 18784), (112, 18817), (113, 18823), (115, 18853), (116, 18880), (117, 18895), (119, 18922), (120, 18928), (122, 19018), (124, 19075), (132, 19153), (135, 19189), (137, 19228), (140, 19252), (146, 19339),

Gene: phiCAM_23 Start: 20017, Stop: 21960, Start Num: 7
Candidate Starts for phiCAM_23:
(1, 19699), (2, 19702), (Start: 7 @20017 has 10 MA's), (14, 20167), (23, 20326), (34, 20536), (36, 20545), (38, 20560), (40, 20569), (52, 20659), (59, 20770), (67, 20860), (69, 20902), (78, 20968), (81, 20998), (84, 21037), (85, 21043), (86, 21070), (88, 21079), (92, 21124), (94, 21163), (97, 21220), (98, 21241), (107, 21337), (118, 21508), (121, 21598), (122, 21622), (125, 21700), (134, 21790), (144, 21910), (145, 21919),