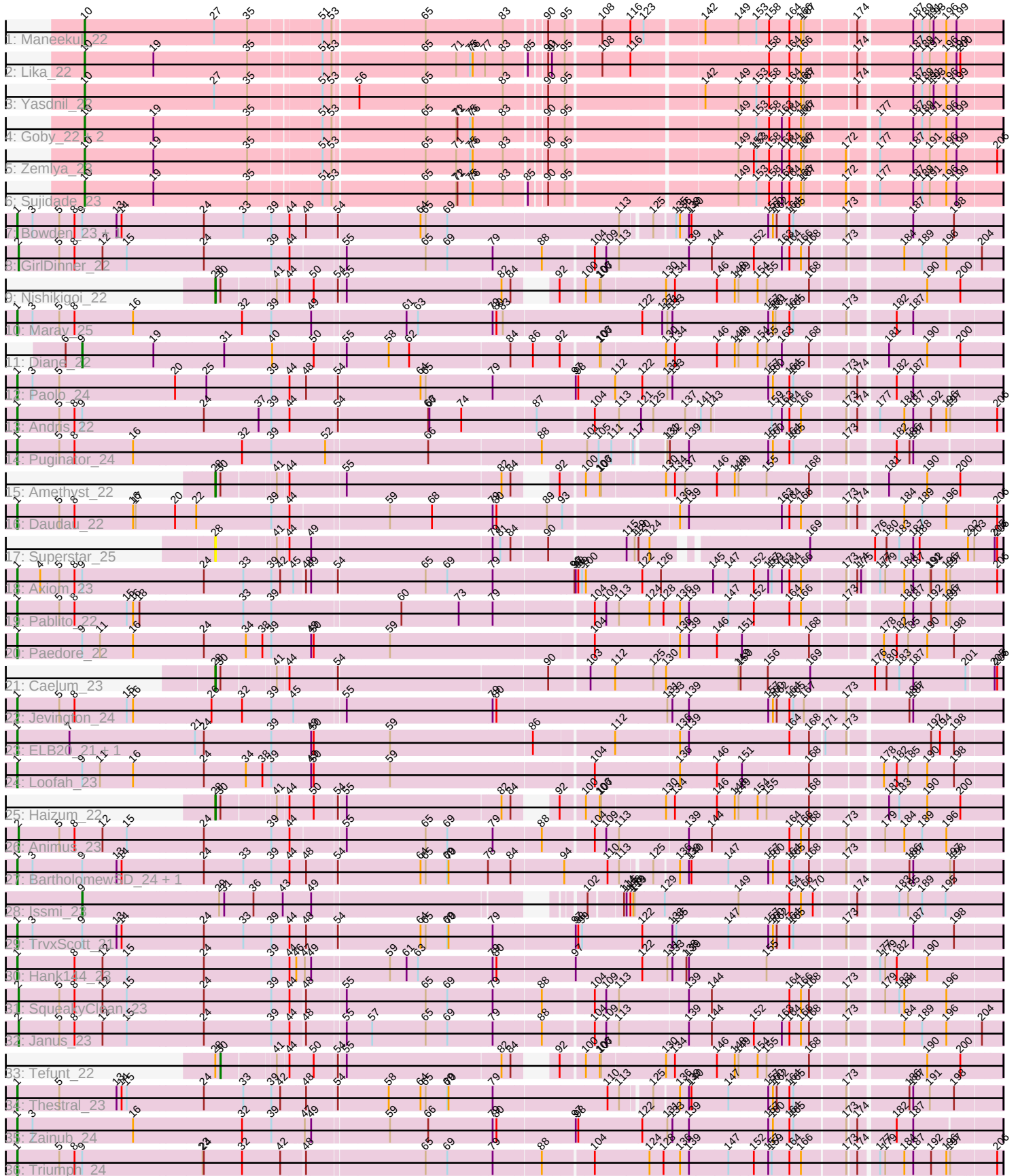


Pham 280611



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 280611 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280611 has 41 members, 1 are drafts.

Phages represented in each track:

- Track 1 : Maneekul_22
- Track 2 : Lika_22
- Track 3 : Yasdnil_22
- Track 4 : Goby_22, Toma_22, Dattran_23
- Track 5 : Zemlya_23
- Track 6 : Sujidade_23
- Track 7 : Bowden_23, TinaBelcher_22
- Track 8 : GirlDinner_22
- Track 9 : Nishikigoi_22
- Track 10 : Marav_25
- Track 11 : Diane_22
- Track 12 : Paolo_24
- Track 13 : Andris_22
- Track 14 : Puginator_24
- Track 15 : Amethyst_22
- Track 16 : Daudau_22
- Track 17 : Superstar_25
- Track 18 : Axiom_23
- Track 19 : Pablito_22
- Track 20 : Paedore_22
- Track 21 : Caelum_23
- Track 22 : Jevington_24
- Track 23 : ELB20_21, R4_22
- Track 24 : Loofah_23
- Track 25 : Haizum_22
- Track 26 : Animus_23
- Track 27 : BartholomewSD_24, Alvy_24
- Track 28 : Issmi_23
- Track 29 : TrvxScott_21
- Track 30 : Hank144_23
- Track 31 : SqueakyClean_23
- Track 32 : Janus_23
- Track 33 : Tefunt_22
- Track 34 : Thestral_23
- Track 35 : Zainub_24
- Track 36 : Triumph_24

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

The start number called the most often in the published annotations is 1, it was called in 21 of the 40 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Alvy_24, Andris_22, Axiom_23, BartholomewSD_24, Bowden_23, Daudau_22, ELB20_21, Hank144_23, Jevington_24, Loofah_23, Marav_25, Pablito_22, Paedore_22, Paolo_24, Puginator_24, R4_22, Thestral_23, TinaBelcher_22, Triumph_24, TrvxScott_21, Zainub_24,

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

•

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

• Amethyst_22, Animus_23, Caelum_23, Dattran_23, Diane_22, GirlDinner_22, Goby_22, Haizum_22, Issmi_23, Janus_23, Lika_22, Maneekul_22, Nishikigoi_22, SqueakyClean_23, Sujidade_23, Superstar_25, Tefunt_22, Toma_22, Yasdnil_22, Zemlya_23,

Summary by start number:

Start 1:

• Found in 21 of 41 (51.2%) of genes in pham
• Manual Annotations of this start: 21 of 40
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alvy_24 (BD2), Andris_22 (BD2), Axiom_23 (BD2), BartholomewSD_24 (BD2), Bowden_23 (BD2), Daudau_22 (BD2), ELB20_21 (BD2), Hank144_23 (BD2), Jevington_24 (BD2), Loofah_23 (BD2), Marav_25 (BD2), Pablito_22 (BD2), Paedore_22 (BD2), Paolo_24 (BD2), Puginator_24 (BD2), R4_22 (BD2), Thestral_23 (BD2), TinaBelcher_22 (BD2), Triumph_24 (BD2), TrvxScott_21 (BD2), Zainub_24 (BD2),

Start 2:

• Found in 4 of 41 (9.8%) of genes in pham
• Manual Annotations of this start: 4 of 40
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Animus_23 (BD2), GirlDinner_22 (BD2), Janus_23 (BD2), SqueakyClean_23 (BD2),

Start 9:

• Found in 12 of 41 (29.3%) of genes in pham
• Manual Annotations of this start: 2 of 40
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Diane_22 (BD2), Issmi_23 (BD2),

Start 10:

• Found in 8 of 41 (19.5%) of genes in pham
• Manual Annotations of this start: 8 of 40
• Called 100.0% of time when present

- Phage (with cluster) where this start called: Dattran_23 (BD1), Goby_22 (BD1), Lika_22 (BD1), Maneekul_22 (BD1), Sujidade_23 (BD1), Toma_22 (BD1), Yasdnil_22 (BD1), Zemlya_23 (BD1),

Start 28:

- Found in 6 of 41 (14.6%) of genes in pham
- Manual Annotations of this start: 4 of 40
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Amethyst_22 (BD2), Caelum_23 (BD2), Haizum_22 (BD2), Nishikigoi_22 (BD2), Superstar_25 (BD2),

Start 30:

- Found in 5 of 41 (12.2%) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Tefunt_22 (BD2),

Summary by clusters:

There are 2 clusters represented in this pham: BD1, BD2,

Info for manual annotations of cluster BD1:

- Start number 10 was manually annotated 8 times for cluster BD1.

Info for manual annotations of cluster BD2:

- Start number 1 was manually annotated 21 times for cluster BD2.
- Start number 2 was manually annotated 4 times for cluster BD2.
- Start number 9 was manually annotated 2 times for cluster BD2.
- Start number 28 was manually annotated 4 times for cluster BD2.
- Start number 30 was manually annotated 1 time for cluster BD2.

Gene Information:

Gene: Alvy_24 Start: 17376, Stop: 19559, Start Num: 1

Candidate Starts for Alvy_24:

(Start: 1 @17376 has 21 MA's), (3, 17412), (Start: 9 @17529 has 2 MA's), (13, 17610), (14, 17622), (24, 17811), (33, 17904), (39, 17970), (44, 18012), (48, 18045), (54, 18111), (64, 18297), (65, 18309), (69, 18360), (70, 18363), (78, 18453), (84, 18504), (94, 18618), (110, 18717), (113, 18744), (125, 18804), (136, 18858), (139, 18879), (140, 18882), (147, 18969), (157, 19059), (160, 19068), (164, 19104), (165, 19113), (168, 19149), (173, 19227), (186, 19353), (187, 19362), (197, 19443), (198, 19452),

Gene: Amethyst_22 Start: 17833, Stop: 19476, Start Num: 28

Candidate Starts for Amethyst_22:

(Start: 28 @17833 has 4 MA's), (Start: 30 @17845 has 1 MA's), (41, 17953), (44, 17974), (55, 18094), (82, 18445), (84, 18466), (92, 18514), (100, 18559), (106, 18592), (107, 18595), (130, 18736), (134, 18757), (137, 18781), (146, 18853), (148, 18895), (149, 18904), (155, 18970), (168, 19063), (181, 19219), (190, 19306), (200, 19381),

Gene: Andris_22 Start: 17081, Stop: 19264, Start Num: 1

Candidate Starts for Andris_22:

(Start: 1 @17081 has 21 MA's), (5, 17180), (8, 17216), (Start: 9 @17234 has 2 MA's), (24, 17516), (37, 17645), (39, 17675), (44, 17717), (54, 17822), (66, 18023), (67, 18026), (74, 18101), (87, 18260), (104, 18377), (113, 18434), (121, 18485), (125, 18512), (137, 18587), (141, 18617), (143, 18641), (159, 18773), (163, 18797), (164, 18812), (166, 18839), (173, 18935), (174, 18953), (177, 18992), (184, 19049), (187, 19070), (192, 19109), (196, 19142), (197, 19151), (206, 19250),

Gene: Animus_23 Start: 17417, Stop: 19603, Start Num: 2

Candidate Starts for Animus_23:

(Start: 2 @17417 has 4 MA's), (5, 17513), (8, 17549), (12, 17615), (15, 17672), (24, 17849), (39, 18008), (44, 18050), (55, 18164), (65, 18347), (69, 18398), (79, 18500), (88, 18605), (104, 18710), (109, 18737), (113, 18767), (139, 18920), (144, 18971), (164, 19145), (166, 19172), (168, 19190), (173, 19268), (179, 19337), (184, 19382), (189, 19424), (196, 19478),

Gene: Axiom_23 Start: 17230, Stop: 19440, Start Num: 1

Candidate Starts for Axiom_23:

(Start: 1 @17230 has 21 MA's), (4, 17284), (5, 17329), (8, 17365), (Start: 9 @17383 has 2 MA's), (24, 17665), (33, 17758), (39, 17824), (42, 17845), (45, 17875), (48, 17899), (49, 17908), (54, 17965), (65, 18163), (69, 18214), (79, 18316), (96, 18499), (97, 18502), (98, 18508), (99, 18517), (100, 18523), (122, 18655), (126, 18697), (145, 18817), (147, 18853), (152, 18910), (157, 18943), (159, 18949), (163, 18973), (164, 18988), (166, 19015), (173, 19111), (174, 19129), (175, 19138), (177, 19168), (179, 19180), (184, 19225), (187, 19246), (191, 19282), (192, 19285), (196, 19318), (197, 19327), (206, 19426),

Gene: BartholomewSD_24 Start: 17376, Stop: 19559, Start Num: 1

Candidate Starts for BartholomewSD_24:

(Start: 1 @17376 has 21 MA's), (3, 17412), (Start: 9 @17529 has 2 MA's), (13, 17610), (14, 17622), (24, 17811), (33, 17904), (39, 17970), (44, 18012), (48, 18045), (54, 18111), (64, 18297), (65, 18309), (69, 18360), (70, 18363), (78, 18453), (84, 18504), (94, 18618), (110, 18717), (113, 18744), (125, 18804), (136, 18858), (139, 18879), (140, 18882), (147, 18969), (157, 19059), (160, 19068), (164, 19104), (165, 19113), (168, 19149), (173, 19227), (186, 19353), (187, 19362), (197, 19443), (198, 19452),

Gene: Bowden_23 Start: 17308, Stop: 19491, Start Num: 1

Candidate Starts for Bowden_23:

(Start: 1 @17308 has 21 MA's), (3, 17344), (5, 17407), (8, 17443), (Start: 9 @17461 has 2 MA's), (13, 17542), (14, 17554), (24, 17743), (33, 17836), (39, 17902), (44, 17944), (48, 17977), (54, 18043), (64, 18229), (65, 18241), (69, 18292), (113, 18676), (125, 18736), (135, 18781), (136, 18790), (139, 18811), (140, 18814), (157, 18991), (160, 19000), (162, 19009), (164, 19036), (165, 19045), (173, 19159), (187, 19294), (198, 19384),

Gene: Caelum_23 Start: 17860, Stop: 19602, Start Num: 28

Candidate Starts for Caelum_23:

(Start: 28 @17860 has 4 MA's), (Start: 30 @17872 has 1 MA's), (41, 17980), (44, 18001), (54, 18106), (90, 18571), (103, 18655), (112, 18712), (125, 18799), (130, 18829), (149, 18997), (150, 19000), (156, 19063), (169, 19162), (176, 19315), (180, 19342), (183, 19372), (187, 19405), (201, 19525), (205, 19582), (206, 19588),

Gene: Dattran_23 Start: 17351, Stop: 19336, Start Num: 10

Candidate Starts for Dattran_23:

(Start: 10 @17351 has 8 MA's), (19, 17507), (35, 17726), (51, 17879), (53, 17900), (65, 18101), (71, 18170), (72, 18173), (75, 18200), (76, 18206), (83, 18275), (90, 18356), (95, 18395), (149, 18767), (153, 18806), (158, 18836), (163, 18863), (164, 18878), (166, 18905), (167, 18911), (177, 19058), (187, 19136), (189, 19157), (191, 19172), (196, 19211), (199, 19235),

Gene: Daudau_22 Start: 17288, Stop: 19480, Start Num: 1

Candidate Starts for Daudau_22:

(Start: 1 @17288 has 21 MA's), (5, 17387), (8, 17423), (16, 17561), (17, 17567), (20, 17657), (22, 17705), (39, 17882), (44, 17924), (59, 18134), (68, 18233), (79, 18371), (80, 18380), (89, 18494), (93, 18524), (136, 18776), (139, 18797), (163, 19007), (164, 19022), (166, 19049), (173, 19145), (174, 19163), (184, 19259), (189, 19301), (196, 19355), (206, 19466),

Gene: Diane_22 Start: 17826, Stop: 19859, Start Num: 9

Candidate Starts for Diane_22:

(6, 17787), (Start: 9 @17826 has 2 MA's), (19, 17994), (31, 18153), (40, 18258), (50, 18348), (55, 18414), (58, 18507), (62, 18555), (84, 18783), (86, 18834), (92, 18897), (106, 18975), (107, 18978), (130, 19119), (134, 19140), (146, 19236), (148, 19278), (149, 19287), (154, 19332), (155, 19353), (163, 19386), (168, 19446), (181, 19602), (190, 19689), (200, 19764),

Gene: ELB20_21 Start: 17412, Stop: 19601, Start Num: 1

Candidate Starts for ELB20_21:

(Start: 1 @17412 has 21 MA's), (7, 17535), (21, 17826), (24, 17847), (39, 18006), (49, 18093), (50, 18099), (59, 18273), (86, 18594), (112, 18765), (136, 18906), (139, 18927), (164, 19152), (168, 19197), (171, 19227), (173, 19275), (192, 19449), (194, 19470), (198, 19500),

Gene: GirlDinner_22 Start: 17079, Stop: 19265, Start Num: 2

Candidate Starts for GirlDinner_22:

(Start: 2 @17079 has 4 MA's), (5, 17175), (8, 17211), (12, 17277), (15, 17334), (24, 17511), (39, 17670), (44, 17712), (55, 17826), (65, 18009), (69, 18060), (79, 18162), (88, 18267), (104, 18372), (109, 18399), (113, 18429), (139, 18582), (144, 18633), (152, 18729), (163, 18792), (164, 18807), (166, 18834), (168, 18852), (173, 18930), (184, 19044), (189, 19086), (196, 19140), (204, 19215),

Gene: Goby_22 Start: 17357, Stop: 19342, Start Num: 10

Candidate Starts for Goby_22:

(Start: 10 @17357 has 8 MA's), (19, 17513), (35, 17732), (51, 17885), (53, 17906), (65, 18107), (71, 18176), (72, 18179), (75, 18206), (76, 18212), (83, 18281), (90, 18362), (95, 18401), (149, 18773), (153, 18812), (158, 18842), (163, 18869), (164, 18884), (166, 18911), (167, 18917), (177, 19064), (187, 19142), (189, 19163), (191, 19178), (196, 19217), (199, 19241),

Gene: Haizum_22 Start: 17858, Stop: 19498, Start Num: 28

Candidate Starts for Haizum_22:

(Start: 28 @17858 has 4 MA's), (Start: 30 @17870 has 1 MA's), (41, 17978), (44, 17999), (50, 18053), (54, 18104), (55, 18119), (82, 18467), (84, 18488), (92, 18536), (100, 18581), (106, 18614), (107, 18617), (130, 18758), (134, 18779), (146, 18875), (148, 18917), (149, 18926), (154, 18971), (155, 18992), (168, 19085), (181, 19241), (183, 19262), (190, 19328), (200, 19403),

Gene: Hank144_23 Start: 17474, Stop: 19687, Start Num: 1

Candidate Starts for Hank144_23:

(Start: 1 @17474 has 21 MA's), (8, 17609), (12, 17675), (15, 17732), (24, 17909), (39, 18068), (44, 18110), (46, 18125), (47, 18140), (49, 18152), (59, 18320), (61, 18359), (63, 18386), (79, 18557), (80, 18566), (97, 18743), (122, 18896), (131, 18950), (133, 18962), (138, 18995), (139, 19001), (155, 19181), (177, 19409), (179, 19421), (182, 19445), (190, 19517),

Gene: Issmi_23 Start: 18292, Stop: 20220, Start Num: 9

Candidate Starts for Issmi_23:

(Start: 9 @18292 has 2 MA's), (29, 18607), (31, 18619), (36, 18685), (43, 18748), (49, 18808), (102, 19330), (114, 19390), (115, 19396), (116, 19405), (118, 19411), (119, 19414), (129, 19480), (149,

19648), (164, 19759), (166, 19786), (170, 19813), (174, 19900), (183, 19984), (185, 20005), (189, 20038), (195, 20092),

Gene: Janus_23 Start: 17417, Stop: 19603, Start Num: 2

Candidate Starts for Janus_23:

(Start: 2 @17417 has 4 MA's), (5, 17513), (8, 17549), (12, 17615), (15, 17672), (24, 17849), (39, 18008), (44, 18050), (48, 18083), (55, 18164), (57, 18221), (65, 18347), (69, 18398), (79, 18500), (88, 18605), (104, 18710), (109, 18737), (113, 18767), (139, 18920), (144, 18971), (152, 19067), (163, 19130), (164, 19145), (166, 19172), (168, 19190), (173, 19268), (184, 19382), (189, 19424), (196, 19478), (204, 19553),

Gene: Jevington_24 Start: 17726, Stop: 19936, Start Num: 1

Candidate Starts for Jevington_24:

(Start: 1 @17726 has 21 MA's), (5, 17825), (8, 17861), (15, 17984), (16, 17999), (26, 18179), (32, 18251), (39, 18320), (45, 18371), (55, 18476), (79, 18815), (80, 18824), (131, 19208), (133, 19220), (139, 19259), (157, 19442), (160, 19451), (162, 19460), (164, 19487), (165, 19496), (167, 19520), (173, 19610), (186, 19736), (187, 19745),

Gene: Lika_22 Start: 17372, Stop: 19357, Start Num: 10

Candidate Starts for Lika_22:

(Start: 10 @17372 has 8 MA's), (19, 17528), (35, 17747), (51, 17900), (53, 17921), (65, 18122), (71, 18191), (75, 18221), (76, 18227), (77, 18254), (83, 18296), (85, 18344), (90, 18377), (91, 18386), (95, 18416), (108, 18494), (116, 18557), (158, 18857), (164, 18899), (166, 18926), (174, 19040), (187, 19157), (189, 19178), (191, 19193), (196, 19232), (199, 19256), (200, 19265),

Gene: Loofah_23 Start: 17341, Stop: 19530, Start Num: 1

Candidate Starts for Loofah_23:

(Start: 1 @17341 has 21 MA's), (Start: 9 @17494 has 2 MA's), (11, 17536), (16, 17614), (24, 17776), (34, 17875), (38, 17914), (39, 17935), (49, 18022), (50, 18028), (59, 18202), (104, 18649), (136, 18835), (146, 18919), (151, 18976), (168, 19123), (178, 19264), (182, 19294), (185, 19321), (190, 19366), (198, 19426),

Gene: Maneekul_22 Start: 17342, Stop: 19333, Start Num: 10

Candidate Starts for Maneekul_22:

(Start: 10 @17342 has 8 MA's), (27, 17645), (35, 17723), (51, 17876), (53, 17897), (65, 18098), (83, 18272), (90, 18353), (95, 18392), (108, 18470), (116, 18533), (123, 18563), (142, 18686), (149, 18764), (153, 18803), (158, 18833), (164, 18875), (166, 18902), (167, 18908), (174, 19016), (187, 19133), (189, 19154), (191, 19169), (193, 19178), (196, 19208), (199, 19232),

Gene: Marav_25 Start: 18076, Stop: 20283, Start Num: 1

Candidate Starts for Marav_25:

(Start: 1 @18076 has 21 MA's), (3, 18112), (5, 18175), (8, 18211), (16, 18349), (32, 18601), (39, 18670), (49, 18754), (61, 18961), (63, 18988), (79, 19162), (80, 19171), (83, 19186), (122, 19501), (127, 19546), (131, 19555), (133, 19567), (157, 19789), (160, 19798), (161, 19804), (164, 19834), (165, 19843), (173, 19957), (182, 20053), (187, 20092),

Gene: Nishikigoi_22 Start: 17858, Stop: 19498, Start Num: 28

Candidate Starts for Nishikigoi_22:

(Start: 28 @17858 has 4 MA's), (Start: 30 @17870 has 1 MA's), (41, 17978), (44, 17999), (50, 18053), (54, 18104), (55, 18119), (82, 18467), (84, 18488), (92, 18536), (100, 18581), (106, 18614), (107, 18617), (130, 18758), (134, 18779), (146, 18875), (148, 18917), (149, 18926), (154, 18971), (155, 18992), (168, 19085), (190, 19328), (200, 19403),

Gene: Pablito_22 Start: 17181, Stop: 19376, Start Num: 1

Candidate Starts for Pablito_22:

(Start: 1 @17181 has 21 MA's), (5, 17280), (8, 17316), (15, 17439), (16, 17454), (18, 17469), (33, 17709), (39, 17775), (60, 18060), (73, 18195), (79, 18270), (104, 18480), (109, 18507), (113, 18537), (124, 18606), (128, 18639), (136, 18678), (139, 18699), (147, 18789), (152, 18846), (164, 18924), (166, 18951), (173, 19047), (184, 19161), (187, 19182), (192, 19221), (196, 19254), (197, 19263),

Gene: Paedore_22 Start: 17341, Stop: 19530, Start Num: 1

Candidate Starts for Paedore_22:

(Start: 1 @17341 has 21 MA's), (Start: 9 @17494 has 2 MA's), (11, 17536), (16, 17614), (24, 17776), (34, 17875), (38, 17914), (39, 17935), (49, 18022), (50, 18028), (59, 18202), (104, 18649), (136, 18835), (139, 18856), (146, 18919), (151, 18976), (168, 19123), (178, 19264), (182, 19294), (185, 19321), (190, 19366), (198, 19426),

Gene: Paolo_24 Start: 17738, Stop: 19948, Start Num: 1

Candidate Starts for Paolo_24:

(Start: 1 @17738 has 21 MA's), (3, 17774), (5, 17837), (20, 18107), (25, 18179), (39, 18332), (44, 18374), (48, 18407), (54, 18473), (64, 18659), (65, 18671), (79, 18827), (97, 19013), (98, 19019), (112, 19103), (122, 19166), (131, 19220), (133, 19232), (157, 19454), (160, 19463), (164, 19499), (165, 19508), (173, 19622), (174, 19640), (182, 19718), (187, 19757),

Gene: Puginator_24 Start: 17783, Stop: 19963, Start Num: 1

Candidate Starts for Puginator_24:

(Start: 1 @17783 has 21 MA's), (5, 17882), (8, 17918), (16, 18056), (32, 18308), (39, 18377), (52, 18500), (66, 18725), (88, 18974), (101, 19079), (105, 19106), (111, 19136), (117, 19181), (131, 19238), (132, 19244), (139, 19289), (157, 19469), (160, 19478), (164, 19514), (165, 19523), (173, 19637), (182, 19733), (186, 19763), (187, 19772),

Gene: R4_22 Start: 17423, Stop: 19612, Start Num: 1

Candidate Starts for R4_22:

(Start: 1 @17423 has 21 MA's), (7, 17546), (21, 17837), (24, 17858), (39, 18017), (49, 18104), (50, 18110), (59, 18284), (86, 18605), (112, 18776), (136, 18917), (139, 18938), (164, 19163), (168, 19208), (171, 19238), (173, 19286), (192, 19460), (194, 19481), (198, 19511),

Gene: SqueakyClean_23 Start: 17343, Stop: 19529, Start Num: 2

Candidate Starts for SqueakyClean_23:

(Start: 2 @17343 has 4 MA's), (5, 17439), (8, 17475), (12, 17541), (15, 17598), (24, 17775), (39, 17934), (44, 17976), (48, 18009), (55, 18090), (65, 18273), (69, 18324), (79, 18426), (88, 18531), (104, 18636), (109, 18663), (113, 18693), (139, 18846), (144, 18897), (164, 19071), (166, 19098), (168, 19116), (173, 19194), (179, 19263), (183, 19296), (184, 19308), (196, 19404),

Gene: Sujidade_23 Start: 17648, Stop: 19633, Start Num: 10

Candidate Starts for Sujidade_23:

(Start: 10 @17648 has 8 MA's), (19, 17804), (35, 18023), (51, 18176), (53, 18197), (65, 18398), (71, 18467), (72, 18470), (75, 18497), (76, 18503), (83, 18572), (85, 18620), (90, 18653), (95, 18692), (149, 19064), (153, 19103), (158, 19133), (163, 19160), (164, 19175), (166, 19202), (167, 19208), (172, 19298), (177, 19355), (187, 19433), (189, 19454), (191, 19469), (196, 19508), (199, 19532),

Gene: Superstar_25 Start: 19064, Stop: 20764, Start Num: 28

Candidate Starts for Superstar_25:

(Start: 28 @19064 has 4 MA's), (41, 19184), (44, 19205), (49, 19253), (79, 19655), (81, 19673), (84, 19697), (90, 19775), (115, 19937), (119, 19955), (120, 19964), (124, 19988), (169, 20312), (176, 20465), (180, 20492), (183, 20522), (187, 20555), (188, 20567), (202, 20681), (203, 20696), (205,

20744), (206, 20750),

Gene: Tefunt_22 Start: 17870, Stop: 19501, Start Num: 30

Candidate Starts for Tefunt_22:

(Start: 28 @17858 has 4 MA's), (Start: 30 @17870 has 1 MA's), (41, 17978), (44, 17999), (50, 18053), (54, 18104), (55, 18119), (82, 18470), (84, 18491), (92, 18539), (100, 18584), (106, 18617), (107, 18620), (130, 18761), (134, 18782), (146, 18878), (148, 18920), (149, 18929), (154, 18974), (155, 18995), (168, 19088), (190, 19331), (200, 19406),

Gene: Thestral_23 Start: 17311, Stop: 19494, Start Num: 1

Candidate Starts for Thestral_23:

(Start: 1 @17311 has 21 MA's), (5, 17410), (13, 17545), (14, 17557), (15, 17569), (24, 17746), (33, 17839), (39, 17905), (42, 17926), (48, 17980), (54, 18046), (58, 18157), (64, 18232), (65, 18244), (69, 18295), (70, 18298), (79, 18397), (110, 18652), (113, 18679), (125, 18739), (136, 18793), (139, 18814), (140, 18817), (147, 18904), (157, 18994), (160, 19003), (162, 19012), (164, 19039), (165, 19048), (173, 19162), (186, 19288), (187, 19297), (191, 19333), (198, 19387),

Gene: TinaBelcher_22 Start: 17259, Stop: 19442, Start Num: 1

Candidate Starts for TinaBelcher_22:

(Start: 1 @17259 has 21 MA's), (3, 17295), (5, 17358), (8, 17394), (Start: 9 @17412 has 2 MA's), (13, 17493), (14, 17505), (24, 17694), (33, 17787), (39, 17853), (44, 17895), (48, 17928), (54, 17994), (64, 18180), (65, 18192), (69, 18243), (113, 18627), (125, 18687), (135, 18732), (136, 18741), (139, 18762), (140, 18765), (157, 18942), (160, 18951), (162, 18960), (164, 18987), (165, 18996), (173, 19110), (187, 19245), (198, 19335),

Gene: Toma_22 Start: 17357, Stop: 19342, Start Num: 10

Candidate Starts for Toma_22:

(Start: 10 @17357 has 8 MA's), (19, 17513), (35, 17732), (51, 17885), (53, 17906), (65, 18107), (71, 18176), (72, 18179), (75, 18206), (76, 18212), (83, 18281), (90, 18362), (95, 18401), (149, 18773), (153, 18812), (158, 18842), (163, 18869), (164, 18884), (166, 18911), (167, 18917), (177, 19064), (187, 19142), (189, 19163), (191, 19178), (196, 19217), (199, 19241),

Gene: Triumph_24 Start: 17260, Stop: 19452, Start Num: 1

Candidate Starts for Triumph_24:

(Start: 1 @17260 has 21 MA's), (5, 17359), (8, 17395), (Start: 9 @17413 has 2 MA's), (23, 17692), (24, 17695), (32, 17785), (42, 17875), (48, 17929), (65, 18193), (69, 18244), (79, 18346), (88, 18451), (104, 18556), (124, 18682), (128, 18715), (136, 18754), (139, 18775), (147, 18865), (152, 18922), (157, 18955), (159, 18961), (164, 19000), (166, 19027), (173, 19123), (174, 19141), (177, 19180), (179, 19192), (184, 19237), (187, 19258), (192, 19297), (196, 19330), (197, 19339), (206, 19438),

Gene: TrvxScott_21 Start: 17261, Stop: 19474, Start Num: 1

Candidate Starts for TrvxScott_21:

(Start: 1 @17261 has 21 MA's), (3, 17297), (Start: 9 @17414 has 2 MA's), (13, 17495), (14, 17507), (24, 17696), (33, 17789), (39, 17855), (44, 17897), (48, 17930), (54, 17996), (64, 18182), (65, 18194), (69, 18245), (70, 18248), (79, 18347), (97, 18533), (98, 18539), (99, 18548), (122, 18686), (133, 18752), (135, 18761), (147, 18884), (157, 18974), (160, 18983), (162, 18992), (164, 19019), (165, 19028), (173, 19142), (187, 19277), (198, 19367),

Gene: Yasdnii_22 Start: 17339, Stop: 19330, Start Num: 10

Candidate Starts for Yasdnii_22:

(Start: 10 @17339 has 8 MA's), (27, 17642), (35, 17720), (51, 17873), (53, 17894), (56, 17942), (65, 18095), (83, 18269), (90, 18350), (95, 18389), (142, 18683), (149, 18761), (153, 18800), (158, 18830), (164, 18872), (166, 18899), (167, 18905), (174, 19013), (187, 19130), (189, 19151), (191, 19166),

(193, 19175), (196, 19205), (199, 19229),

Gene: Zainub_24 Start: 17696, Stop: 19903, Start Num: 1

Candidate Starts for Zainub_24:

(Start: 1 @17696 has 21 MA's), (3, 17732), (16, 17969), (32, 18221), (39, 18290), (47, 18362), (49, 18374), (59, 18542), (66, 18632), (79, 18782), (80, 18791), (97, 18968), (98, 18974), (122, 19121), (131, 19175), (133, 19187), (139, 19226), (157, 19409), (160, 19418), (164, 19454), (165, 19463), (173, 19577), (174, 19595), (182, 19673), (187, 19712),

Gene: Zemlya_23 Start: 17368, Stop: 19353, Start Num: 10

Candidate Starts for Zemlya_23:

(Start: 10 @17368 has 8 MA's), (19, 17524), (35, 17743), (51, 17896), (53, 17917), (65, 18118), (71, 18187), (75, 18217), (76, 18223), (83, 18292), (90, 18373), (95, 18412), (149, 18784), (152, 18817), (153, 18823), (158, 18853), (163, 18880), (164, 18895), (166, 18922), (167, 18928), (172, 19018), (177, 19075), (187, 19153), (191, 19189), (196, 19228), (199, 19252), (206, 19339),