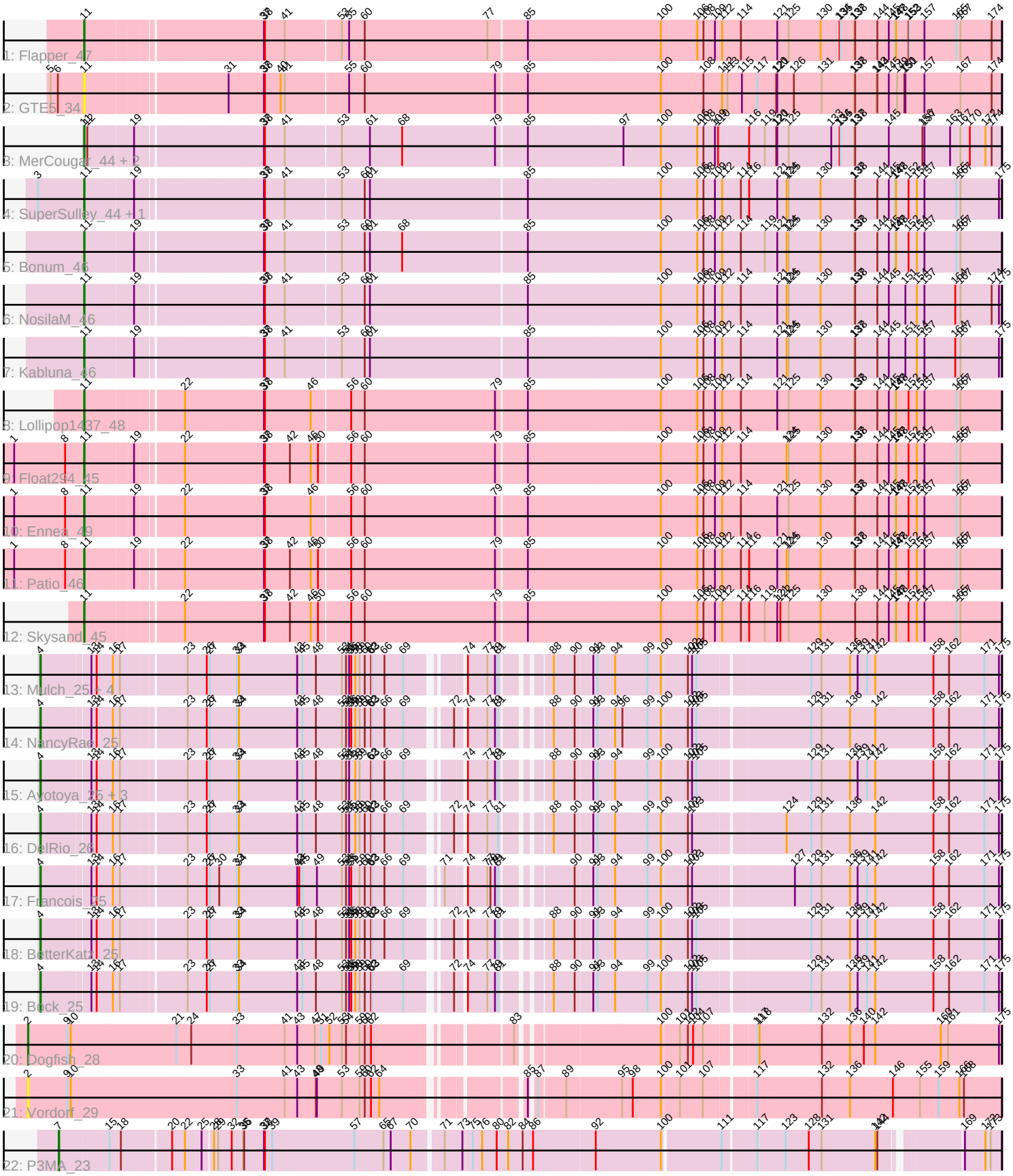
Pham 196706


1: Flapper_47
2: GTE5_34
3: MerCougar_44 + 2
4: SuperSulley_44 + 1
5: Bonum_46
6: NosilaM_46
7: Kabluna_46
8: Lollipop1437_48
9: Float294_45
10: Ennea_49
11: Patio_46
12: Skysand_45
13: Mulch_25 + 4
14: NancyRae_25
15: Ayotoya_25 + 3
16: DelRio_26
17: Francois_25
18: BetterKatz_25
19: Bock_25
20: Dogfish_28
21: Vordorf_29
22: P3MA_23

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 196706 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196706 has 32 members, 2 are drafts.

Phages represented in each track:
- Track 1 : Flapper_47
- Track 2 : GTE5_34
- Track 3 : MerCougar_44, StarStruck_44, Outis_44
- Track 4 : SuperSulley_44, Buggaboo_44
- Track 5 : Bonum_46
- Track 6 : NosilaM_46
- Track 7 : Kabluna_46
- Track 8 : Lollipop1437_48
- Track 9 : Float294_45
- Track 10 : Ennea_49
- Track 11 : Patio_46
- Track 12 : Skysand_45
- Track 13 : Mulch_25, WheatThin_25, Nadeem_25, Brylie_25, Parada_25
- Track 14 : NancyRae_25
- Track 15 : Ayotoya_25, GrandSlam_25, Chop_25, Hamood_25
- Track 16 : DelRio_26
- Track 17 : Francois_25
- Track 18 : BetterKatz_25
- Track 19 : Bock_25
- Track 20 : Dogfish_28
- Track 21 : Vordorf_29
- Track 22 : P3MA_23

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

The start number called the most often in the published annotations is 11, it was called in 14 of the 30 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Bonum_46, Buggaboo_44, Ennea_49, Flapper_47, Float294_45, GTE5_34, Kabluna_46, Lollipop1437_48, MerCougar_44, NosilaM_46, Outis_44, Patio_46, Skysand_45, StarStruck_44, SuperSulley_44,

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

•

Genes that do not have the "Most Annotated" start:
• Ayotoya_25, BetterKatz_25, Bock_25, Brylie_25, Chop_25, DelRio_26, Dogfish_28, Francois_25, GrandSlam_25, Hamood_25, Mulch_25, Nadeem_25, NancyRae_25, P3MA_23, Parada_25, Vordorf_29, WheatThin_25,

Summary by start number:

Start 2:
• Found in 2 of 32 (6.2%) 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: Dogfish_28 (DT), Vordorf_29 (DT),

Start 4:
• Found in 14 of 32 (43.8%) of genes in pham
• Manual Annotations of this start: 14 of 30
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Ayotoya_25 (DI), BetterKatz_25 (DI), Bock_25 (DI), Brylie_25 (DI), Chop_25 (DI), DelRio_26 (DI), Francois_25 (DI), GrandSlam_25 (DI), Hamood_25 (DI), Mulch_25 (DI), Nadeem_25 (DI), NancyRae_25 (DI), Parada_25 (DI), WheatThin_25 (DI),

Start 7:
• Found in 1 of 32 (3.1%) 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: P3MA_23 (singleton),

Start 11:
• Found in 15 of 32 (46.9%) of genes in pham
• Manual Annotations of this start: 14 of 30
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Bonum_46 (CR2), Buggaboo_44 (CR2), Ennea_49 (CR3), Flapper_47 (CR1), Float294_45 (CR3), GTE5_34 (CR1), Kabluna_46 (CR2), Lollipop1437_48 (CR3), MerCougar_44 (CR2), NosilaM_46 (CR2), Outis_44 (CR2), Patio_46 (CR3), Skysand_45 (CR3), StarStruck_44 (CR2), SuperSulley_44 (CR2),

Summary by clusters:

There are 6 clusters represented in this pham: CR2, CR3, singleton, CR1, DI, DT,

Info for manual annotations of cluster CR1:
•Start number 11 was manually annotated 1 time for cluster CR1.

Info for manual annotations of cluster CR2:
•Start number 11 was manually annotated 8 times for cluster CR2.

Info for manual annotations of cluster CR3:
•Start number 11 was manually annotated 5 times for cluster CR3.

Info for manual annotations of cluster DI:
•Start number 4 was manually annotated 14 times for cluster DI.

Info for manual annotations of cluster DT:
•Start number 2 was manually annotated 1 time for cluster DT.

Gene Information:

Gene: Ayotoya_25 Start: 21393, Stop: 23903, Start Num: 4
Candidate Starts for Ayotoya_25:
(Start: 4 @21393 has 14 MA's), (13, 21525), (14, 21540), (16, 21585), (17, 21603), (23, 21768), (26, 21822), (27, 21831), (33, 21909), (34, 21915), (43, 22080), (45, 22095), (48, 22131), (53, 22206), (54, 22218), (55, 22227), (58, 22245), (59, 22257), (62, 22290), (63, 22293), (66, 22329), (69, 22383), (74, 22506), (77, 22560), (79, 22581), (81, 22590), (88, 22692), (90, 22752), (91, 22800), (93, 22812), (94, 22857), (99, 22944), (100, 22983), (102, 23052), (103, 23064), (105, 23076), (129, 23364), (131, 23394), (136, 23475), (139, 23496), (141, 23523), (142, 23547), (158, 23712), (162, 23757), (171, 23856), (175, 23895),

Gene: BetterKatz_25 Start: 20866, Stop: 23376, Start Num: 4
Candidate Starts for BetterKatz_25:
(Start: 4 @20866 has 14 MA's), (13, 20998), (14, 21013), (16, 21058), (17, 21076), (23, 21241), (26, 21295), (27, 21304), (33, 21382), (34, 21388), (43, 21553), (45, 21568), (48, 21604), (53, 21679), (54, 21691), (55, 21700), (56, 21706), (58, 21718), (59, 21730), (60, 21745), (62, 21763), (63, 21766), (66, 21802), (69, 21856), (72, 21961), (74, 21979), (77, 22033), (79, 22054), (81, 22063), (88, 22165), (90, 22225), (91, 22273), (93, 22285), (94, 22330), (99, 22417), (100, 22456), (102, 22525), (103, 22537), (105, 22549), (129, 22837), (131, 22867), (136, 22948), (139, 22969), (141, 22996), (142, 23020), (158, 23185), (162, 23230), (171, 23329), (175, 23368),

Gene: Bock_25 Start: 20616, Stop: 23126, Start Num: 4
Candidate Starts for Bock_25:
(Start: 4 @20616 has 14 MA's), (13, 20748), (14, 20763), (16, 20808), (17, 20826), (23, 20991), (26, 21045), (27, 21054), (33, 21132), (34, 21138), (43, 21303), (45, 21318), (48, 21354), (53, 21429), (54, 21441), (55, 21450), (56, 21456), (58, 21468), (59, 21480), (60, 21495), (62, 21513), (63, 21516), (69, 21606), (72, 21711), (74, 21729), (77, 21783), (79, 21804), (81, 21813), (88, 21915), (90, 21975), (91, 22023), (93, 22035), (94, 22080), (99, 22167), (100, 22206), (102, 22275), (103, 22287), (105, 22299), (129, 22587), (131, 22617), (136, 22698), (139, 22719), (141, 22746), (142, 22770), (158, 22935), (162, 22980), (171, 23079), (175, 23118),

Gene: Bonum_46 Start: 32908, Stop: 35466, Start Num: 11
Candidate Starts for Bonum_46:
(Start: 11 @32908 has 14 MA's), (19, 33037), (37, 33376), (38, 33379), (41, 33436), (53, 33589), (60, 33655), (61, 33670), (68, 33760), (85, 34111), (100, 34489), (106, 34594), (108, 34612), (109, 34645), (112, 34666), (114, 34720), (119, 34789), (121, 34825), (124, 34852), (125, 34858), (130, 34948), (137, 35044), (138, 35047), (144, 35110), (145, 35143), (147, 35161), (148, 35164), (152, 35200), (154, 35224), (157, 35245), (165, 35335), (167, 35347),

Gene: Brylie_25 Start: 20607, Stop: 23117, Start Num: 4
Candidate Starts for Brylie_25:
(Start: 4 @20607 has 14 MA's), (13, 20739), (14, 20754), (16, 20799), (17, 20817), (23, 20982), (26, 21036), (27, 21045), (33, 21123), (34, 21129), (43, 21294), (45, 21309), (48, 21345), (53, 21420), (54, 21432), (55, 21441), (56, 21447), (58, 21459), (59, 21471), (60, 21486), (62, 21504), (63, 21507), (66,

21543), (69, 21597), (74, 21720), (77, 21774), (79, 21795), (81, 21804), (88, 21906), (90, 21966), (91, 22014), (93, 22026), (94, 22071), (99, 22158), (100, 22197), (102, 22266), (103, 22278), (105, 22290), (129, 22578), (131, 22608), (136, 22689), (139, 22710), (141, 22737), (142, 22761), (158, 22926), (162, 22971), (171, 23070), (175, 23109),

Gene: Buggaboo_44 Start: 33387, Stop: 35945, Start Num: 11
Candidate Starts for Buggaboo_44:
(3, 33258), (Start: 11 @33387 has 14 MA's), (19, 33516), (37, 33855), (38, 33858), (41, 33915), (53, 34068), (60, 34134), (61, 34149), (85, 34590), (100, 34968), (106, 35073), (108, 35091), (109, 35124), (112, 35145), (114, 35199), (116, 35223), (121, 35304), (124, 35331), (125, 35337), (130, 35427), (137, 35523), (138, 35526), (144, 35589), (145, 35622), (147, 35640), (148, 35643), (152, 35679), (154, 35703), (157, 35724), (165, 35814), (167, 35826), (175, 35937),

Gene: Chop_25 Start: 21141, Stop: 23651, Start Num: 4
Candidate Starts for Chop_25:
(Start: 4 @21141 has 14 MA's), (13, 21273), (14, 21288), (16, 21333), (17, 21351), (23, 21516), (26, 21570), (27, 21579), (33, 21657), (34, 21663), (43, 21828), (45, 21843), (48, 21879), (53, 21954), (54, 21966), (55, 21975), (58, 21993), (59, 22005), (62, 22038), (63, 22041), (66, 22077), (69, 22131), (74, 22254), (77, 22308), (79, 22329), (81, 22338), (88, 22440), (90, 22500), (91, 22548), (93, 22560), (94, 22605), (99, 22692), (100, 22731), (102, 22800), (103, 22812), (105, 22824), (129, 23112), (131, 23142), (136, 23223), (139, 23244), (141, 23271), (142, 23295), (158, 23460), (162, 23505), (171, 23604), (175, 23643),

Gene: DelRio_26 Start: 21615, Stop: 24125, Start Num: 4
Candidate Starts for DelRio_26:
(Start: 4 @21615 has 14 MA's), (13, 21747), (14, 21762), (16, 21807), (17, 21825), (23, 21990), (26, 22044), (27, 22053), (33, 22131), (34, 22137), (43, 22302), (45, 22317), (48, 22353), (53, 22428), (54, 22440), (55, 22449), (58, 22467), (59, 22479), (60, 22494), (62, 22512), (63, 22515), (66, 22551), (69, 22605), (72, 22710), (74, 22728), (77, 22782), (81, 22812), (88, 22914), (90, 22974), (91, 23022), (93, 23034), (94, 23079), (99, 23166), (100, 23205), (102, 23274), (103, 23286), (124, 23520), (129, 23586), (131, 23616), (136, 23697), (142, 23769), (158, 23934), (162, 23979), (171, 24078), (175, 24117),

Gene: Dogfish_28 Start: 23683, Stop: 26286, Start Num: 2
Candidate Starts for Dogfish_28:
(Start: 2 @23683 has 1 MA's), (9, 23797), (10, 23806), (21, 24109), (24, 24151), (33, 24283), (41, 24418), (43, 24454), (47, 24502), (51, 24520), (52, 24544), (53, 24580), (54, 24592), (59, 24631), (60, 24646), (62, 24664), (83, 24997), (100, 25360), (101, 25402), (102, 25423), (104, 25438), (107, 25465), (117, 25591), (118, 25597), (132, 25774), (136, 25855), (140, 25894), (142, 25927), (160, 26113), (161, 26134), (175, 26278),

Gene: Ennea_49 Start: 34236, Stop: 36794, Start Num: 11
Candidate Starts for Ennea_49:
(1, 34038), (8, 34185), (Start: 11 @34236 has 14 MA's), (19, 34365), (22, 34485), (37, 34704), (38, 34707), (46, 34836), (56, 34944), (60, 34983), (79, 35355), (85, 35439), (100, 35817), (106, 35922), (108, 35940), (109, 35973), (112, 35994), (114, 36048), (121, 36153), (125, 36186), (130, 36276), (137, 36372), (138, 36375), (144, 36438), (145, 36471), (147, 36489), (148, 36492), (152, 36528), (154, 36552), (157, 36573), (165, 36663), (167, 36675),

Gene: Flapper_47 Start: 33951, Stop: 36509, Start Num: 11
Candidate Starts for Flapper_47:
(Start: 11 @33951 has 14 MA's), (37, 34419), (38, 34422), (41, 34479), (53, 34632), (55, 34653), (60, 34698), (77, 35049), (85, 35154), (100, 35532), (106, 35637), (108, 35655), (109, 35688), (112,

35709), (114, 35763), (121, 35868), (125, 35901), (130, 35991), (134, 36045), (135, 36048), (137, 36087), (138, 36090), (144, 36153), (145, 36186), (147, 36204), (148, 36207), (152, 36243), (153, 36246), (157, 36288), (165, 36378), (167, 36390), (174, 36480),

Gene: Float294_45 Start: 33678, Stop: 36236, Start Num: 11
Candidate Starts for Float294_45:
(1, 33480), (8, 33627), (Start: 11 @33678 has 14 MA's), (19, 33807), (22, 33927), (37, 34146), (38, 34149), (42, 34221), (46, 34278), (50, 34299), (56, 34386), (60, 34425), (79, 34797), (85, 34881), (100, 35259), (106, 35364), (108, 35382), (109, 35415), (112, 35436), (114, 35490), (124, 35622), (125, 35628), (130, 35718), (137, 35814), (138, 35817), (144, 35880), (145, 35913), (147, 35931), (148, 35934), (152, 35970), (154, 35994), (157, 36015), (165, 36105), (167, 36117),

Gene: Francois_25 Start: 20630, Stop: 23140, Start Num: 4
Candidate Starts for Francois_25:
(Start: 4 @20630 has 14 MA's), (13, 20762), (14, 20777), (16, 20822), (17, 20840), (23, 21005), (26, 21059), (27, 21068), (30, 21095), (33, 21146), (34, 21152), (43, 21317), (44, 21323), (45, 21332), (49, 21371), (53, 21443), (54, 21455), (55, 21464), (56, 21470), (59, 21494), (60, 21509), (62, 21527), (63, 21530), (66, 21566), (69, 21620), (71, 21698), (74, 21743), (77, 21797), (78, 21806), (79, 21818), (81, 21827), (90, 21989), (91, 22037), (93, 22049), (94, 22094), (99, 22181), (100, 22220), (102, 22289), (103, 22301), (127, 22559), (129, 22601), (131, 22631), (136, 22712), (139, 22733), (141, 22760), (142, 22784), (158, 22949), (162, 22994), (171, 23093), (175, 23132),

Gene: GTE5_34 Start: 26806, Stop: 29361, Start Num: 11
Candidate Starts for GTE5_34:
(5, 26713), (6, 26734), (Start: 11 @26806 has 14 MA's), (31, 27175), (37, 27274), (38, 27277), (40, 27322), (41, 27334), (55, 27508), (60, 27553), (79, 27925), (85, 28009), (100, 28387), (108, 28510), (112, 28564), (113, 28579), (115, 28621), (117, 28666), (120, 28720), (121, 28723), (126, 28771), (131, 28849), (137, 28942), (138, 28945), (143, 29005), (144, 29008), (145, 29041), (149, 29065), (150, 29086), (151, 29089), (157, 29143), (167, 29245), (174, 29335),

Gene: GrandSlam_25 Start: 21141, Stop: 23651, Start Num: 4
Candidate Starts for GrandSlam_25:
(Start: 4 @21141 has 14 MA's), (13, 21273), (14, 21288), (16, 21333), (17, 21351), (23, 21516), (26, 21570), (27, 21579), (33, 21657), (34, 21663), (43, 21828), (45, 21843), (48, 21879), (53, 21954), (54, 21966), (55, 21975), (58, 21993), (59, 22005), (62, 22038), (63, 22041), (66, 22077), (69, 22131), (74, 22254), (77, 22308), (79, 22329), (81, 22338), (88, 22440), (90, 22500), (91, 22548), (93, 22560), (94, 22605), (99, 22692), (100, 22731), (102, 22800), (103, 22812), (105, 22824), (129, 23112), (131, 23142), (136, 23223), (139, 23244), (141, 23271), (142, 23295), (158, 23460), (162, 23505), (171, 23604), (175, 23643),

Gene: Hamood_25 Start: 21141, Stop: 23651, Start Num: 4
Candidate Starts for Hamood_25:
(Start: 4 @21141 has 14 MA's), (13, 21273), (14, 21288), (16, 21333), (17, 21351), (23, 21516), (26, 21570), (27, 21579), (33, 21657), (34, 21663), (43, 21828), (45, 21843), (48, 21879), (53, 21954), (54, 21966), (55, 21975), (58, 21993), (59, 22005), (62, 22038), (63, 22041), (66, 22077), (69, 22131), (74, 22254), (77, 22308), (79, 22329), (81, 22338), (88, 22440), (90, 22500), (91, 22548), (93, 22560), (94, 22605), (99, 22692), (100, 22731), (102, 22800), (103, 22812), (105, 22824), (129, 23112), (131, 23142), (136, 23223), (139, 23244), (141, 23271), (142, 23295), (158, 23460), (162, 23505), (171, 23604), (175, 23643),

Gene: Kabluna_46 Start: 32323, Stop: 34881, Start Num: 11
Candidate Starts for Kabluna_46:

(Start: 11 @32323 has 14 MA's), (19, 32452), (37, 32791), (38, 32794), (41, 32851), (53, 33004), (60, 33070), (61, 33085), (85, 33526), (100, 33904), (106, 34009), (108, 34027), (109, 34060), (112, 34081), (114, 34135), (121, 34240), (124, 34267), (125, 34273), (130, 34363), (137, 34459), (138, 34462), (144, 34525), (145, 34558), (151, 34606), (154, 34639), (157, 34660), (164, 34747), (167, 34762), (175, 34873),

Gene: Lollipop1437_48 Start: 34224, Stop: 36782, Start Num: 11
Candidate Starts for Lollipop1437_48:
(Start: 11 @34224 has 14 MA's), (22, 34473), (37, 34692), (38, 34695), (46, 34824), (56, 34932), (60, 34971), (79, 35343), (85, 35427), (100, 35805), (106, 35910), (108, 35928), (109, 35961), (112, 35982), (114, 36036), (121, 36141), (125, 36174), (130, 36264), (137, 36360), (138, 36363), (144, 36426), (145, 36459), (147, 36477), (148, 36480), (152, 36516), (154, 36540), (157, 36561), (165, 36651), (167, 36663),

Gene: MerCougar_44 Start: 33507, Stop: 36065, Start Num: 11
Candidate Starts for MerCougar_44:
(Start: 11 @33507 has 14 MA's), (12, 33516), (19, 33636), (37, 33975), (38, 33978), (41, 34035), (53, 34188), (61, 34269), (68, 34359), (79, 34626), (85, 34710), (97, 34980), (100, 35088), (106, 35193), (108, 35211), (109, 35244), (110, 35253), (116, 35343), (119, 35388), (120, 35421), (121, 35424), (125, 35457), (133, 35577), (134, 35601), (135, 35604), (137, 35643), (138, 35646), (145, 35742), (156, 35838), (157, 35844), (163, 35916), (167, 35946), (170, 35973), (172, 36018), (174, 36036),

Gene: Mulch_25 Start: 20607, Stop: 23117, Start Num: 4
Candidate Starts for Mulch_25:
(Start: 4 @20607 has 14 MA's), (13, 20739), (14, 20754), (16, 20799), (17, 20817), (23, 20982), (26, 21036), (27, 21045), (33, 21123), (34, 21129), (43, 21294), (45, 21309), (48, 21345), (53, 21420), (54, 21432), (55, 21441), (56, 21447), (58, 21459), (59, 21471), (60, 21486), (62, 21504), (63, 21507), (66, 21543), (69, 21597), (74, 21720), (77, 21774), (79, 21795), (81, 21804), (88, 21906), (90, 21966), (91, 22014), (93, 22026), (94, 22071), (99, 22158), (100, 22197), (102, 22266), (103, 22278), (105, 22290), (129, 22578), (131, 22608), (136, 22689), (139, 22710), (141, 22737), (142, 22761), (158, 22926), (162, 22971), (171, 23070), (175, 23109),

Gene: Nadeem_25 Start: 20607, Stop: 23117, Start Num: 4
Candidate Starts for Nadeem_25:
(Start: 4 @20607 has 14 MA's), (13, 20739), (14, 20754), (16, 20799), (17, 20817), (23, 20982), (26, 21036), (27, 21045), (33, 21123), (34, 21129), (43, 21294), (45, 21309), (48, 21345), (53, 21420), (54, 21432), (55, 21441), (56, 21447), (58, 21459), (59, 21471), (60, 21486), (62, 21504), (63, 21507), (66, 21543), (69, 21597), (74, 21720), (77, 21774), (79, 21795), (81, 21804), (88, 21906), (90, 21966), (91, 22014), (93, 22026), (94, 22071), (99, 22158), (100, 22197), (102, 22266), (103, 22278), (105, 22290), (129, 22578), (131, 22608), (136, 22689), (139, 22710), (141, 22737), (142, 22761), (158, 22926), (162, 22971), (171, 23070), (175, 23109),

Gene: NancyRae_25 Start: 20613, Stop: 23123, Start Num: 4
Candidate Starts for NancyRae_25:
(Start: 4 @20613 has 14 MA's), (13, 20745), (14, 20760), (16, 20805), (17, 20823), (23, 20988), (26, 21042), (27, 21051), (33, 21129), (34, 21135), (43, 21300), (45, 21315), (48, 21351), (53, 21426), (54, 21438), (55, 21447), (56, 21453), (58, 21465), (59, 21477), (60, 21492), (62, 21510), (63, 21513), (66, 21549), (69, 21603), (72, 21708), (74, 21726), (77, 21780), (79, 21801), (81, 21810), (88, 21912), (90, 21972), (91, 22020), (93, 22032), (94, 22077), (96, 22095), (99, 22164), (100, 22203), (102, 22272), (103, 22284), (105, 22296), (129, 22584), (131, 22614), (136, 22695), (142, 22767), (158, 22932), (162, 22977), (171, 23076), (175, 23115),

Gene: NosilaM_46 Start: 33220, Stop: 35778, Start Num: 11

Candidate Starts for NosilaM_46:
(Start: 11 @33220 has 14 MA's), (19, 33349), (37, 33688), (38, 33691), (41, 33748), (53, 33901), (60, 33967), (61, 33982), (85, 34423), (100, 34801), (106, 34906), (108, 34924), (109, 34957), (112, 34978), (114, 35032), (121, 35137), (124, 35164), (125, 35170), (130, 35260), (137, 35356), (138, 35359), (144, 35422), (145, 35455), (151, 35503), (154, 35536), (157, 35557), (164, 35644), (167, 35659), (174, 35749), (175, 35770),

Gene: Outis_44 Start: 33201, Stop: 35759, Start Num: 11
Candidate Starts for Outis_44:
(Start: 11 @33201 has 14 MA's), (12, 33210), (19, 33330), (37, 33669), (38, 33672), (41, 33729), (53, 33882), (61, 33963), (68, 34053), (79, 34320), (85, 34404), (97, 34674), (100, 34782), (106, 34887), (108, 34905), (109, 34938), (110, 34947), (116, 35037), (119, 35082), (120, 35115), (121, 35118), (125, 35151), (133, 35271), (134, 35295), (135, 35298), (137, 35337), (138, 35340), (145, 35436), (156, 35532), (157, 35538), (163, 35610), (167, 35640), (170, 35667), (172, 35712), (174, 35730),

Gene: P3MA_23 Start: 18041, Stop: 20566, Start Num: 7
Candidate Starts for P3MA_23:
(Start: 7 @18041 has 1 MA's), (15, 18179), (18, 18212), (20, 18338), (22, 18374), (25, 18422), (28, 18449), (29, 18461), (32, 18500), (35, 18533), (36, 18536), (37, 18593), (38, 18596), (39, 18617), (57, 18854), (65, 18935), (67, 18956), (70, 19013), (71, 19094), (73, 19145), (75, 19169), (76, 19196), (80, 19238), (82, 19271), (84, 19313), (86, 19343), (92, 19517), (100, 19700), (111, 19856), (117, 19940), (123, 20015), (128, 20081), (131, 20117), (142, 20267), (144, 20273), (169, 20468), (172, 20525), (173, 20534),

Gene: Parada_25 Start: 20607, Stop: 23117, Start Num: 4
Candidate Starts for Parada_25:
(Start: 4 @20607 has 14 MA's), (13, 20739), (14, 20754), (16, 20799), (17, 20817), (23, 20982), (26, 21036), (27, 21045), (33, 21123), (34, 21129), (43, 21294), (45, 21309), (48, 21345), (53, 21420), (54, 21432), (55, 21441), (56, 21447), (58, 21459), (59, 21471), (60, 21486), (62, 21504), (63, 21507), (66, 21543), (69, 21597), (74, 21720), (77, 21774), (79, 21795), (81, 21804), (88, 21906), (90, 21966), (91, 22014), (93, 22026), (94, 22071), (99, 22158), (100, 22197), (102, 22266), (103, 22278), (105, 22290), (129, 22578), (131, 22608), (136, 22689), (139, 22710), (141, 22737), (142, 22761), (158, 22926), (162, 22971), (171, 23070), (175, 23109),

Gene: Patio_46 Start: 33460, Stop: 36018, Start Num: 11
Candidate Starts for Patio_46:
(1, 33262), (8, 33409), (Start: 11 @33460 has 14 MA's), (19, 33589), (22, 33709), (37, 33928), (38, 33931), (42, 34003), (46, 34060), (50, 34081), (56, 34168), (60, 34207), (79, 34579), (85, 34663), (100, 35041), (106, 35146), (108, 35164), (109, 35197), (112, 35218), (114, 35272), (116, 35296), (121, 35377), (124, 35404), (125, 35410), (130, 35500), (137, 35596), (138, 35599), (144, 35662), (145, 35695), (147, 35713), (148, 35716), (152, 35752), (154, 35776), (157, 35797), (165, 35887), (167, 35899),

Gene: Skysand_45 Start: 33680, Stop: 36238, Start Num: 11
Candidate Starts for Skysand_45:
(Start: 11 @33680 has 14 MA's), (22, 33929), (37, 34148), (38, 34151), (42, 34223), (46, 34280), (50, 34301), (56, 34388), (60, 34427), (79, 34799), (85, 34883), (100, 35261), (106, 35366), (108, 35384), (109, 35417), (112, 35438), (114, 35492), (116, 35516), (119, 35561), (121, 35597), (122, 35606), (125, 35630), (130, 35720), (138, 35819), (144, 35882), (145, 35915), (147, 35933), (148, 35936), (152, 35972), (154, 35996), (157, 36017), (165, 36107), (167, 36119),

Gene: StarStruck_44 Start: 33201, Stop: 35759, Start Num: 11
Candidate Starts for StarStruck_44:

(Start: 11 @33201 has 14 MA's), (12, 33210), (19, 33330), (37, 33669), (38, 33672), (41, 33729), (53, 33882), (61, 33963), (68, 34053), (79, 34320), (85, 34404), (97, 34674), (100, 34782), (106, 34887), (108, 34905), (109, 34938), (110, 34947), (116, 35037), (119, 35082), (120, 35115), (121, 35118), (125, 35151), (133, 35271), (134, 35295), (135, 35298), (137, 35337), (138, 35340), (145, 35436), (156, 35532), (157, 35538), (163, 35610), (167, 35640), (170, 35667), (172, 35712), (174, 35730),

Gene: SuperSulley_44 Start: 33387, Stop: 35945, Start Num: 11
Candidate Starts for SuperSulley_44:
(3, 33258), (Start: 11 @33387 has 14 MA's), (19, 33516), (37, 33855), (38, 33858), (41, 33915), (53, 34068), (60, 34134), (61, 34149), (85, 34590), (100, 34968), (106, 35073), (108, 35091), (109, 35124), (112, 35145), (114, 35199), (116, 35223), (121, 35304), (124, 35331), (125, 35337), (130, 35427), (137, 35523), (138, 35526), (144, 35589), (145, 35622), (147, 35640), (148, 35643), (152, 35679), (154, 35703), (157, 35724), (165, 35814), (167, 35826), (175, 35937),

Gene: Vordorf_29 Start: 24001, Stop: 26601, Start Num: 2
Candidate Starts for Vordorf_29:
(Start: 2 @24001 has 1 MA's), (9, 24115), (10, 24124), (33, 24601), (41, 24736), (43, 24772), (48, 24823), (49, 24826), (53, 24898), (59, 24949), (60, 24964), (62, 24982), (64, 25006), (85, 25336), (87, 25348), (89, 25420), (95, 25567), (98, 25597), (100, 25678), (101, 25720), (107, 25783), (117, 25909), (132, 26092), (136, 26173), (146, 26296), (155, 26371), (159, 26425), (166, 26485), (168, 26497),

Gene: WheatThin_25 Start: 20607, Stop: 23117, Start Num: 4
Candidate Starts for WheatThin_25:
(Start: 4 @20607 has 14 MA's), (13, 20739), (14, 20754), (16, 20799), (17, 20817), (23, 20982), (26, 21036), (27, 21045), (33, 21123), (34, 21129), (43, 21294), (45, 21309), (48, 21345), (53, 21420), (54, 21432), (55, 21441), (56, 21447), (58, 21459), (59, 21471), (60, 21486), (62, 21504), (63, 21507), (66, 21543), (69, 21597), (74, 21720), (77, 21774), (79, 21795), (81, 21804), (88, 21906), (90, 21966), (91, 22014), (93, 22026), (94, 22071), (99, 22158), (100, 22197), (102, 22266), (103, 22278), (105, 22290), (129, 22578), (131, 22608), (136, 22689), (139, 22710), (141, 22737), (142, 22761), (158, 22926), (162, 22971), (171, 23070), (175, 23109),