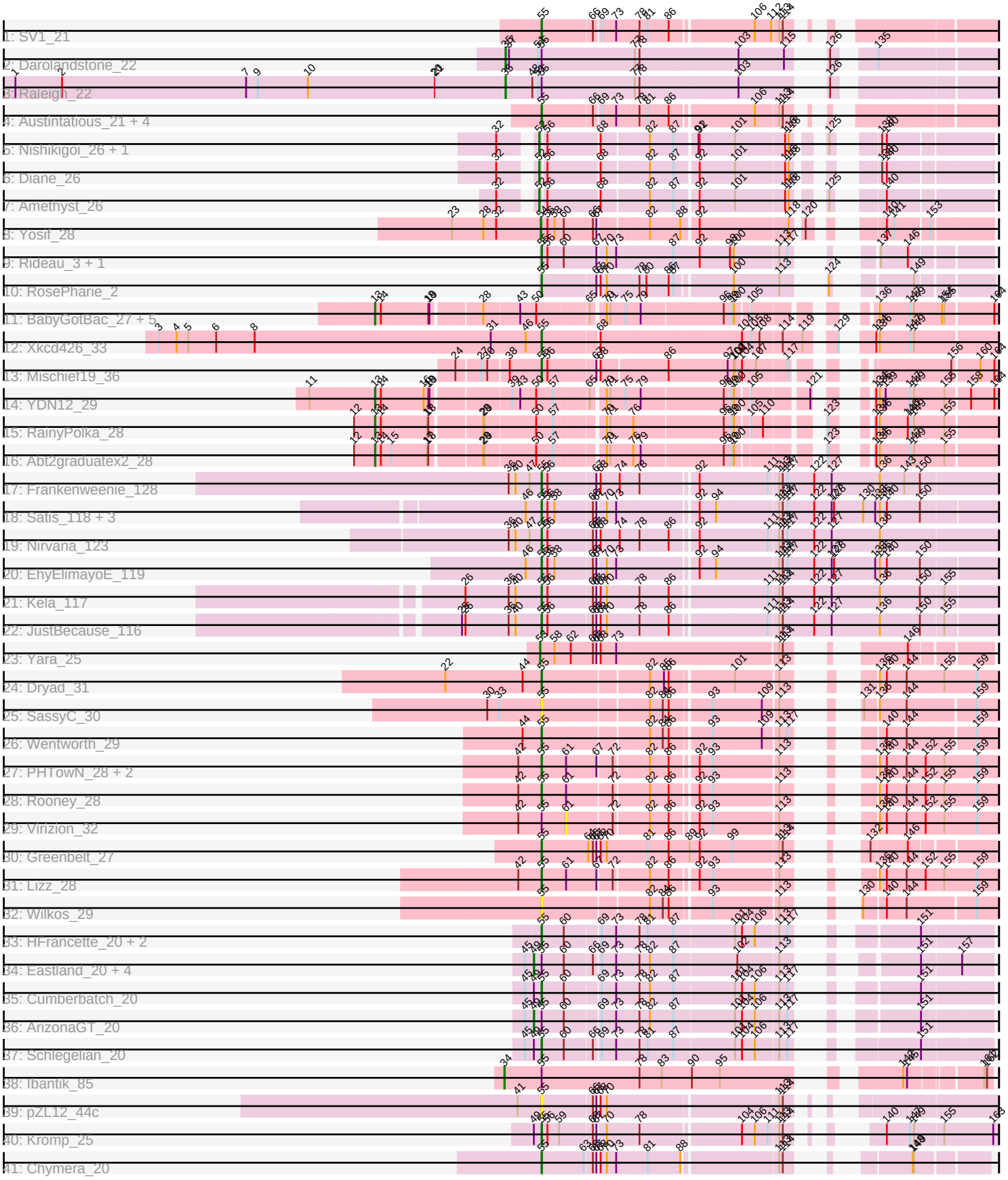
Pham 347621


1: SV1_21
2: Darolandstone_22
3: Raleigh_22
4: Austintatious_21 + 4
5: Nishikigoi_26 + 1
6: Diane_26
7: Amethyst_26
8: Yosif_28
9: Rideau_3 + 1
10: RosePharie_2
11: BabyGotBac_27 + 5
12: Xkcd426_33
13: Mischief19_36
14: YDN12_29
15: RainyPolka_28
16: Abt2graduatex2_28
17: Frankenweenie_128
18: Satis_118 + 3
19: Nirvana_123
20: EhyElimayoE_119
21: Kela_117
22: JustBecause_116
23: Yara_25
24: Dryad_31
25: SassyC_30
26: Wentworth_29
27: PHTownN_28 + 2
28: Rooney_28
29: Virizion_32
30: Greenbelt_27
31: Lizz_28
32: Wilkos_29
33: HFrancette_20 + 2
34: Eastland_20 + 4
35: Cumberbatch_20
36: ArizonaGT_20
37: Schlegelian_20
38: Ibantik_85
39: pZL12_44c
40: Kromp_25
41: Chymera_20

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 347621 Report

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

Pham number 347621 has 63 members, 5 are drafts.

Phages represented in each track:
- Track 1 : SV1_21
- Track 2 : Darolandstone_22
- Track 3 : Raleigh_22
- Track 4 : Austintatious_21, Ididsumtinwong_21, PapayaSalad_21, Bioscum_21, Lishka_21
- Track 5 : Nishikigoi_26, Haizum_26
- Track 6 : Diane_26
- Track 7 : Amethyst_26
- Track 8 : Yosif_28
- Track 9 : Rideau_3, Dennebes_2
- Track 10 : RosePharie_2
- Track 11 : BabyGotBac_27, Asis_27, BayC_27, Maih_27, TP1604_27, Salete_27
- Track 12 : Xkcd426_33
- Track 13 : Mischief19_36
- Track 14 : YDN12_29
- Track 15 : RainyPolka_28
- Track 16 : Abt2graduatex2_28
- Track 17 : Frankenweenie_128
- Track 18 : Satis_118, Quantum_117, Sarkar_118, Kradal_118
- Track 19 : Nirvana_123
- Track 20 : EhyElimayoE_119
- Track 21 : Kela_117
- Track 22 : JustBecause_116
- Track 23 : Yara_25
- Track 24 : Dryad_31
- Track 25 : SassyC_30
- Track 26 : Wentworth_29
- Track 27 : PHTowN_28, Gibson_28, ShakeNBake_28
- Track 28 : Rooney_28
- Track 29 : Virizion_32
- Track 30 : Greenbelt_27
- Track 31 : Lizz_28
- Track 32 : Wilkos_29
- Track 33 : HFrancette_20, Ignacio_20, Vondra_20
- Track 34 : Eastland_20, AxeJC_20, FrumpyGal_20, Piccadilly_20, Eklok_20
- Track 35 : Cumberbatch_20
- Track 36 : ArizonaGT_20

• Track 37 : Schlegelian_20
• Track 38 : Ibantik_85
• Track 39 : pZL12_44c
• Track 40 : Kromp_25
• Track 41 : Chymera_20

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

The start number called the most often in the published annotations is 55, it was called in 34 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Austintatious_21, Bioscum_21, Chymera_20, Cumberbatch_20, Dennebes_2, Dryad_31, EhyElimayoE_119, Frankenweenie_128, Gibson_28, Greenbelt_27, HFrancette_20, Ididsumtinwong_21, Ignacio_20, JustBecause_116, Kela_117, Kradal_118, Kromp_25, Lishka_21, Lizz_28, Mischief19_36, Nirvana_123, PHTowN_28, PapayaSalad_21, Quantum_117, Rideau_3, Rooney_28, RosePharie_2, SV1_21, Sarkar_118, SassyC_30, Satis_118, Schlegelian_20, ShakeNBake_28, Vondra_20, Wentworth_29, Wilkos_29, Xkcd426_33, pZL12_44c,

Genes that have the "Most Annotated" start but do not call it:
• ArizonaGT_20, AxeJC_20, Darolandstone_22, Eastland_20, Eklok_20, FrumpyGal_20, Ibantik_85, Piccadilly_20, Raleigh_22, Virizion_32,

Genes that do not have the "Most Annotated" start:
• Abt2graduatex2_28, Amethyst_26, Asis_27, BabyGotBac_27, BayC_27, Diane_26, Haizum_26, Maih_27, Nishikigoi_26, RainyPolka_28, Salete_27, TP1604_27, YDN12_29, Yara_25, Yosif_28,

Summary by start number:

Start 13:
• Found in 9 of 63 (14.3%) of genes in pham
• Manual Annotations of this start: 9 of 58
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Abt2graduatex2_28 (BG), Asis_27 (BG), BabyGotBac_27 (BG), BayC_27 (BG), Maih_27 (BG), RainyPolka_28 (BG), Salete_27 (BG), TP1604_27 (BG), YDN12_29 (BG),

Start 34:
• Found in 1 of 63 (1.6%) of genes in pham
• Manual Annotations of this start: 1 of 58
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Ibantik_85 (JN),

Start 35:
• Found in 2 of 63 (3.2%) of genes in pham
• Manual Annotations of this start: 2 of 58
• Called 100.0% of time when present

• Phage (with cluster) where this start called: Darolandstone_22 (BC2), Raleigh_22 (BC2),

Start 49:
• Found in 9 of 63 (14.3%) of genes in pham
• Manual Annotations of this start: 6 of 58
• Called 66.7% of time when present
• Phage (with cluster) where this start called: ArizonaGT_20 (BP), AxeJC_20 (BP), Eastland_20 (BP), Eklok_20 (BP), FrumpyGal_20 (BP), Piccadilly_20 (BP),

Start 52:
• Found in 4 of 63 (6.3%) of genes in pham
• Manual Annotations of this start: 4 of 58
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amethyst_26 (BD2), Diane_26 (BD2), Haizum_26 (BD2), Nishikigoi_26 (BD2),

Start 53:
• Found in 1 of 63 (1.6%) of genes in pham
• Manual Annotations of this start: 1 of 58
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Yara_25 (BN),

Start 54:
• Found in 1 of 63 (1.6%) of genes in pham
• Manual Annotations of this start: 1 of 58
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Yosif_28 (BD3),

Start 55:
• Found in 48 of 63 (76.2%) of genes in pham
• Manual Annotations of this start: 34 of 58
• Called 79.2% of time when present
• Phage (with cluster) where this start called: Austintatious_21 (BC3), Bioscum_21 (BC3), Chymera_20 (singleton), Cumberbatch_20 (BP), Dennebes_2 (BF), Dryad_31 (BN), EhyElimayoE_119 (BM), Frankenweenie_128 (BM), Gibson_28 (BN), Greenbelt_27 (BN), HFrancette_20 (BP), Ididsumtinwong_21 (BC3), Ignacio_20 (BP), JustBecause_116 (BM), Kela_117 (BM), Kradal_118 (BM), Kromp_25 (singleton), Lishka_21 (BC3), Lizz_28 (BN), Mischief19_36 (BG), Nirvana_123 (BM), PHTowN_28 (BN), PapayaSalad_21 (BC3), Quantum_117 (BM), Rideau_3 (BF), Rooney_28 (BN), RosePharie_2 (BF), SV1_21 (BC1), Sarkar_118 (BM), SassyC_30 (BN), Satis_118 (BM), Schlegelian_20 (BP), ShakeNBake_28 (BN), Vondra_20 (BP), Wentworth_29 (BN), Wilkos_29 (BN), Xkcd426_33 (BG), pZL12_44c (singleton),

Start 61:
• Found in 6 of 63 (9.5%) of genes in pham
• No Manual Annotations of this start.
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Virizion_32 (BN),

Summary by clusters:

There are 12 clusters represented in this pham: BF, BG, BM, BN, singleton, JN, BP, BD3, BD2, BC1, BC2, BC3,

Info for manual annotations of cluster BC1:
•Start number 55 was manually annotated 1 time for cluster BC1.

Info for manual annotations of cluster BC2:
•Start number 35 was manually annotated 2 times for cluster BC2.

Info for manual annotations of cluster BC3:
•Start number 55 was manually annotated 5 times for cluster BC3.

Info for manual annotations of cluster BD2:
•Start number 52 was manually annotated 4 times for cluster BD2.

Info for manual annotations of cluster BD3:
•Start number 54 was manually annotated 1 time for cluster BD3.

Info for manual annotations of cluster BF:
•Start number 55 was manually annotated 2 times for cluster BF.

Info for manual annotations of cluster BG:
•Start number 13 was manually annotated 9 times for cluster BG.
•Start number 55 was manually annotated 2 times for cluster BG.

Info for manual annotations of cluster BM:
•Start number 55 was manually annotated 9 times for cluster BM.

Info for manual annotations of cluster BN:
•Start number 53 was manually annotated 1 time for cluster BN.
•Start number 55 was manually annotated 8 times for cluster BN.

Info for manual annotations of cluster BP:
•Start number 49 was manually annotated 6 times for cluster BP.
•Start number 55 was manually annotated 5 times for cluster BP.

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

Gene Information:

Gene: Abt2graduatex2_28 Start: 26138, Stop: 27415, Start Num: 13
Candidate Starts for Abt2graduatex2_28:
(12, 26084), (Start: 13 @26138 has 9 MA's), (14, 26153), (15, 26180), (17, 26270), (18, 26273), (28, 26384), (29, 26387), (50, 26510), (57, 26546), (70, 26642), (71, 26651), (76, 26699), (79, 26714), (96, 26900), (99, 26918), (100, 26924), (123, 27077), (134, 27128), (136, 27131), (147, 27209), (149, 27218), (155, 27293),

Gene: Amethyst_26 Start: 21581, Stop: 22531, Start Num: 52
Candidate Starts for Amethyst_26:

(32, 21512), (Start: 52 @21581 has 4 MA's), (56, 21593), (68, 21722), (82, 21833), (87, 21893), (92, 21941), (101, 22031), (116, 22154), (118, 22163), (125, 22208), (140, 22280),

Gene: ArizonaGT_20 Start: 16980, Stop: 17939, Start Num: 49
Candidate Starts for ArizonaGT_20:
(45, 16962), (Start: 49 @16980 has 6 MA's), (Start: 55 @16995 has 34 MA's), (60, 17049), (69, 17130), (73, 17166), (78, 17220), (82, 17247), (87, 17307), (101, 17457), (104, 17475), (106, 17508), (113, 17562), (117, 17583), (151, 17766),

Gene: Asis_27 Start: 25552, Stop: 26814, Start Num: 13
Candidate Starts for Asis_27:
(Start: 13 @25552 has 9 MA's), (14, 25564), (18, 25684), (19, 25687), (28, 25795), (43, 25882), (50, 25921), (65, 26029), (70, 26053), (71, 26062), (75, 26095), (79, 26125), (96, 26302), (99, 26320), (100, 26326), (105, 26356), (136, 26533), (147, 26611), (149, 26620), (154, 26689), (155, 26695), (164, 26809),

Gene: Austintatious_21 Start: 16123, Stop: 17064, Start Num: 55
Candidate Starts for Austintatious_21:
(Start: 55 @16123 has 34 MA's), (66, 16243), (69, 16258), (73, 16294), (78, 16348), (81, 16369), (86, 16423), (106, 16618), (113, 16672), (114, 16681),

Gene: AxeJC_20 Start: 16979, Stop: 17923, Start Num: 49
Candidate Starts for AxeJC_20:
(45, 16961), (Start: 49 @16979 has 6 MA's), (Start: 55 @16994 has 34 MA's), (60, 17048), (66, 17114), (69, 17129), (73, 17165), (78, 17219), (82, 17246), (87, 17306), (102, 17462), (113, 17561), (151, 17750), (157, 17849),

Gene: BabyGotBac_27 Start: 25552, Stop: 26814, Start Num: 13
Candidate Starts for BabyGotBac_27:
(Start: 13 @25552 has 9 MA's), (14, 25564), (18, 25684), (19, 25687), (28, 25795), (43, 25882), (50, 25921), (65, 26029), (70, 26053), (71, 26062), (75, 26095), (79, 26125), (96, 26302), (99, 26320), (100, 26326), (105, 26356), (136, 26533), (147, 26611), (149, 26620), (154, 26689), (155, 26695), (164, 26809),

Gene: BayC_27 Start: 25552, Stop: 26814, Start Num: 13
Candidate Starts for BayC_27:
(Start: 13 @25552 has 9 MA's), (14, 25564), (18, 25684), (19, 25687), (28, 25795), (43, 25882), (50, 25921), (65, 26029), (70, 26053), (71, 26062), (75, 26095), (79, 26125), (96, 26302), (99, 26320), (100, 26326), (105, 26356), (136, 26533), (147, 26611), (149, 26620), (154, 26689), (155, 26695), (164, 26809),

Gene: Bioscum_21 Start: 16159, Stop: 17100, Start Num: 55
Candidate Starts for Bioscum_21:
(Start: 55 @16159 has 34 MA's), (66, 16279), (69, 16294), (73, 16330), (78, 16384), (81, 16405), (86, 16459), (106, 16654), (113, 16708), (114, 16717),

Gene: Chymera_20 Start: 16278, Stop: 17153, Start Num: 55
Candidate Starts for Chymera_20:
(Start: 55 @16278 has 34 MA's), (63, 16380), (66, 16398), (67, 16407), (68, 16410), (70, 16425), (73, 16449), (81, 16524), (88, 16608), (113, 16827), (114, 16836), (148, 16989), (149, 16992),

Gene: Cumberbatch_20 Start: 16995, Stop: 17939, Start Num: 55
Candidate Starts for Cumberbatch_20:

(45, 16962), (Start: 49 @16980 has 6 MA's), (Start: 55 @16995 has 34 MA's), (60, 17049), (69, 17130), (73, 17166), (78, 17220), (82, 17247), (87, 17307), (101, 17457), (104, 17475), (106, 17508), (113, 17562), (117, 17583), (151, 17766),

Gene: Darolandstone_22 Start: 18382, Stop: 19467, Start Num: 35
Candidate Starts for Darolandstone_22:
(Start: 35 @18382 has 2 MA's), (37, 18391), (51, 18466), (Start: 55 @18475 has 34 MA's), (77, 18715), (78, 18727), (103, 18970), (115, 19087), (126, 19117), (135, 19186),

Gene: Dennebes_2 Start: 2618, Stop: 3529, Start Num: 55
Candidate Starts for Dennebes_2:
(Start: 55 @2618 has 34 MA's), (56, 2630), (60, 2672), (67, 2753), (70, 2771), (73, 2795), (87, 2936), (92, 3002), (98, 3080), (100, 3089), (113, 3197), (117, 3218), (137, 3278), (146, 3344),

Gene: Diane_26 Start: 21914, Stop: 22867, Start Num: 52
Candidate Starts for Diane_26:
(32, 21845), (Start: 52 @21914 has 4 MA's), (56, 21926), (68, 22055), (82, 22166), (87, 22226), (92, 22274), (101, 22364), (116, 22487), (118, 22496), (138, 22604), (140, 22616),

Gene: Dryad_31 Start: 20705, Stop: 21643, Start Num: 55
Candidate Starts for Dryad_31:
(22, 20459), (44, 20657), (Start: 55 @20705 has 34 MA's), (82, 20954), (85, 20990), (86, 21002), (101, 21149), (113, 21251), (136, 21344), (140, 21362), (144, 21413), (155, 21506), (159, 21590),

Gene: Eastland_20 Start: 16964, Stop: 17908, Start Num: 49
Candidate Starts for Eastland_20:
(45, 16946), (Start: 49 @16964 has 6 MA's), (Start: 55 @16979 has 34 MA's), (60, 17033), (66, 17099), (69, 17114), (73, 17150), (78, 17204), (82, 17231), (87, 17291), (102, 17447), (113, 17546), (151, 17735), (157, 17834),

Gene: EhyElimayoE_119 Start: 77532, Stop: 78617, Start Num: 55
Candidate Starts for EhyElimayoE_119:
(46, 77493), (Start: 55 @77532 has 34 MA's), (56, 77544), (58, 77562), (66, 77652), (67, 77661), (70, 77679), (73, 77703), (92, 77886), (94, 77928), (113, 78081), (114, 78090), (117, 78102), (122, 78171), (127, 78216), (128, 78222), (133, 78327), (136, 78339), (140, 78357), (150, 78438),

Gene: Eklok_20 Start: 16979, Stop: 17923, Start Num: 49
Candidate Starts for Eklok_20:
(45, 16961), (Start: 49 @16979 has 6 MA's), (Start: 55 @16994 has 34 MA's), (60, 17048), (66, 17114), (69, 17129), (73, 17165), (78, 17219), (82, 17246), (87, 17306), (102, 17462), (113, 17561), (151, 17750), (157, 17849),

Gene: Frankenweenie_128 Start: 82432, Stop: 83532, Start Num: 55
Candidate Starts for Frankenweenie_128:
(36, 82351), (40, 82369), (47, 82405), (Start: 55 @82432 has 34 MA's), (56, 82444), (67, 82561), (68, 82564), (74, 82612), (78, 82657), (92, 82786), (111, 82960), (113, 82981), (114, 82990), (117, 83002), (122, 83071), (127, 83116), (136, 83239), (143, 83299), (150, 83338),

Gene: FrumpyGal_20 Start: 16964, Stop: 17908, Start Num: 49
Candidate Starts for FrumpyGal_20:
(45, 16946), (Start: 49 @16964 has 6 MA's), (Start: 55 @16979 has 34 MA's), (60, 17033), (66, 17099), (69, 17114), (73, 17150), (78, 17204), (82, 17231), (87, 17291), (102, 17447), (113, 17546), (151, 17735), (157, 17834),

Gene: Gibson_28 Start: 19877, Stop: 20806, Start Num: 55
Candidate Starts for Gibson_28:
(42, 19820), (Start: 55 @19877 has 34 MA's), (61, 19937), (67, 20012), (72, 20045), (82, 20126), (86, 20174), (92, 20228), (93, 20261), (113, 20420), (136, 20507), (140, 20525), (144, 20576), (152, 20624), (155, 20669), (159, 20753),

Gene: Greenbelt_27 Start: 19143, Stop: 20069, Start Num: 55
Candidate Starts for Greenbelt_27:
(Start: 55 @19143 has 34 MA's), (64, 19257), (66, 19269), (67, 19278), (68, 19281), (70, 19296), (81, 19395), (86, 19449), (89, 19503), (92, 19527), (99, 19608), (113, 19722), (114, 19731), (132, 19791), (146, 19878),

Gene: HFrancette_20 Start: 17010, Stop: 17954, Start Num: 55
Candidate Starts for HFrancette_20:
(Start: 55 @17010 has 34 MA's), (60, 17064), (69, 17145), (73, 17181), (78, 17235), (81, 17256), (87, 17322), (101, 17472), (104, 17490), (106, 17523), (113, 17577), (117, 17598), (151, 17781),

Gene: Haizum_26 Start: 21588, Stop: 22541, Start Num: 52
Candidate Starts for Haizum_26:
(32, 21519), (Start: 52 @21588 has 4 MA's), (56, 21600), (68, 21729), (82, 21840), (87, 21900), (91, 21945), (92, 21948), (101, 22038), (116, 22161), (118, 22170), (125, 22215), (138, 22278), (140, 22290),

Gene: Ibantik_85 Start: 47789, Stop: 48844, Start Num: 34
Candidate Starts for Ibantik_85:
(Start: 34 @47789 has 1 MA's), (Start: 55 @47882 has 34 MA's), (78, 48134), (83, 48188), (90, 48260), (95, 48326), (142, 48653), (145, 48662), (161, 48824), (162, 48830),

Gene: Ididsumtinwong_21 Start: 16159, Stop: 17100, Start Num: 55
Candidate Starts for Ididsumtinwong_21:
(Start: 55 @16159 has 34 MA's), (66, 16279), (69, 16294), (73, 16330), (78, 16384), (81, 16405), (86, 16459), (106, 16654), (113, 16708), (114, 16717),

Gene: Ignacio_20 Start: 17010, Stop: 17954, Start Num: 55
Candidate Starts for Ignacio_20:
(Start: 55 @17010 has 34 MA's), (60, 17064), (69, 17145), (73, 17181), (78, 17235), (81, 17256), (87, 17322), (101, 17472), (104, 17490), (106, 17523), (113, 17577), (117, 17598), (151, 17781),

Gene: JustBecause_116 Start: 76599, Stop: 77684, Start Num: 55
Candidate Starts for JustBecause_116:
(25, 76401), (26, 76410), (36, 76518), (40, 76536), (Start: 55 @76599 has 34 MA's), (56, 76611), (66, 76719), (67, 76728), (68, 76731), (70, 76746), (78, 76824), (86, 76899), (111, 77127), (113, 77148), (114, 77157), (122, 77238), (127, 77283), (136, 77406), (150, 77505), (155, 77562),

Gene: Kela_117 Start: 76479, Stop: 77564, Start Num: 55
Candidate Starts for Kela_117:
(26, 76290), (36, 76398), (40, 76416), (Start: 55 @76479 has 34 MA's), (56, 76491), (66, 76599), (67, 76608), (68, 76611), (70, 76626), (78, 76704), (86, 76779), (111, 77007), (113, 77028), (114, 77037), (122, 77118), (127, 77163), (136, 77286), (150, 77385), (155, 77442),

Gene: Kradal_118 Start: 77529, Stop: 78614, Start Num: 55
Candidate Starts for Kradal_118:

(46, 77490), (Start: 55 @77529 has 34 MA's), (56, 77541), (58, 77559), (66, 77649), (67, 77658), (70, 77676), (73, 77700), (92, 77883), (94, 77925), (113, 78078), (114, 78087), (117, 78099), (122, 78168), (127, 78213), (128, 78219), (130, 78294), (133, 78324), (136, 78336), (140, 78354), (150, 78435),

Gene: Kromp_25 Start: 22282, Stop: 23208, Start Num: 55
Candidate Starts for Kromp_25:
(Start: 49 @22267 has 6 MA's), (Start: 55 @22282 has 34 MA's), (56, 22294), (59, 22324), (66, 22402), (67, 22411), (70, 22429), (78, 22507), (104, 22744), (106, 22777), (111, 22810), (113, 22831), (114, 22840), (140, 22933), (147, 22990), (149, 22999), (155, 23071), (163, 23197),

Gene: Lishka_21 Start: 16123, Stop: 17064, Start Num: 55
Candidate Starts for Lishka_21:
(Start: 55 @16123 has 34 MA's), (66, 16243), (69, 16258), (73, 16294), (78, 16348), (81, 16369), (86, 16423), (106, 16618), (113, 16672), (114, 16681),

Gene: Lizz_28 Start: 19686, Stop: 20615, Start Num: 55
Candidate Starts for Lizz_28:
(42, 19629), (Start: 55 @19686 has 34 MA's), (61, 19746), (67, 19821), (72, 19854), (82, 19935), (86, 19983), (92, 20037), (93, 20070), (113, 20229), (136, 20316), (140, 20334), (144, 20385), (152, 20433), (155, 20478), (159, 20562),

Gene: Maih_27 Start: 25551, Stop: 26813, Start Num: 13
Candidate Starts for Maih_27:
(Start: 13 @25551 has 9 MA's), (14, 25563), (18, 25683), (19, 25686), (28, 25794), (43, 25881), (50, 25920), (65, 26028), (70, 26052), (71, 26061), (75, 26094), (79, 26124), (96, 26301), (99, 26319), (100, 26325), (105, 26355), (136, 26532), (147, 26610), (149, 26619), (154, 26688), (155, 26694), (164, 26808),

Gene: Mischief19_36 Start: 37234, Stop: 38199, Start Num: 55
Candidate Starts for Mischief19_36:
(24, 37042), (27, 37096), (30, 37111), (38, 37159), (Start: 55 @37234 has 34 MA's), (56, 37246), (67, 37363), (68, 37366), (86, 37525), (97, 37669), (100, 37684), (101, 37687), (104, 37705), (107, 37741), (117, 37813), (156, 38092), (160, 38152), (164, 38188),

Gene: Nirvana_123 Start: 80829, Stop: 81929, Start Num: 55
Candidate Starts for Nirvana_123:
(36, 80748), (40, 80766), (47, 80802), (Start: 55 @80829 has 34 MA's), (56, 80841), (66, 80949), (67, 80958), (68, 80961), (74, 81009), (78, 81054), (86, 81129), (92, 81183), (111, 81357), (113, 81378), (114, 81387), (117, 81399), (122, 81468), (127, 81513), (136, 81636),

Gene: Nishikigoi_26 Start: 21588, Stop: 22541, Start Num: 52
Candidate Starts for Nishikigoi_26:
(32, 21519), (Start: 52 @21588 has 4 MA's), (56, 21600), (68, 21729), (82, 21840), (87, 21900), (91, 21945), (92, 21948), (101, 22038), (116, 22161), (118, 22170), (125, 22215), (138, 22278), (140, 22290),

Gene: PHTowN_28 Start: 19684, Stop: 20613, Start Num: 55
Candidate Starts for PHTowN_28:
(42, 19627), (Start: 55 @19684 has 34 MA's), (61, 19744), (67, 19819), (72, 19852), (82, 19933), (86, 19981), (92, 20035), (93, 20068), (113, 20227), (136, 20314), (140, 20332), (144, 20383), (152, 20431), (155, 20476), (159, 20560),

Gene: PapayaSalad_21 Start: 16134, Stop: 17075, Start Num: 55

Candidate Starts for PapayaSalad_21:
(Start: 55 @16134 has 34 MA's), (66, 16254), (69, 16269), (73, 16305), (78, 16359), (81, 16380), (86, 16434), (106, 16629), (113, 16683), (114, 16692),

Gene: Piccadilly_20 Start: 16963, Stop: 17907, Start Num: 49
Candidate Starts for Piccadilly_20:
(45, 16945), (Start: 49 @16963 has 6 MA's), (Start: 55 @16978 has 34 MA's), (60, 17032), (66, 17098), (69, 17113), (73, 17149), (78, 17203), (82, 17230), (87, 17290), (102, 17446), (113, 17545), (151, 17734), (157, 17833),

Gene: Quantum_117 Start: 77529, Stop: 78614, Start Num: 55
Candidate Starts for Quantum_117:
(46, 77490), (Start: 55 @77529 has 34 MA's), (56, 77541), (58, 77559), (66, 77649), (67, 77658), (70, 77676), (73, 77700), (92, 77883), (94, 77925), (113, 78078), (114, 78087), (117, 78099), (122, 78168), (127, 78213), (128, 78219), (130, 78294), (133, 78324), (136, 78336), (140, 78354), (150, 78435),

Gene: RainyPolka_28 Start: 26004, Stop: 27281, Start Num: 13
Candidate Starts for RainyPolka_28:
(12, 25950), (Start: 13 @26004 has 9 MA's), (14, 26019), (17, 26136), (18, 26139), (28, 26250), (29, 26253), (50, 26376), (57, 26412), (70, 26508), (71, 26517), (76, 26565), (96, 26766), (99, 26784), (100, 26790), (105, 26820), (110, 26847), (123, 26943), (134, 26994), (136, 26997), (146, 27069), (147, 27075), (149, 27084), (155, 27159),

Gene: Raleigh_22 Start: 18601, Stop: 19683, Start Num: 35
Candidate Starts for Raleigh_22:
(1, 17341), (2, 17461), (7, 17935), (9, 17965), (10, 18094), (20, 18421), (21, 18424), (Start: 35 @18601 has 2 MA's), (48, 18670), (51, 18685), (Start: 55 @18694 has 34 MA's), (77, 18934), (78, 18946), (103, 19186), (126, 19333),

Gene: Rideau_3 Start: 2618, Stop: 3529, Start Num: 55
Candidate Starts for Rideau_3:
(Start: 55 @2618 has 34 MA's), (56, 2630), (60, 2672), (67, 2753), (70, 2771), (73, 2795), (87, 2936), (92, 3002), (98, 3080), (100, 3089), (113, 3197), (117, 3218), (137, 3278), (146, 3344),

Gene: Rooney_28 Start: 19874, Stop: 20803, Start Num: 55
Candidate Starts for Rooney_28:
(42, 19817), (Start: 55 @19874 has 34 MA's), (61, 19934), (72, 20042), (82, 20123), (86, 20171), (92, 20225), (93, 20258), (113, 20417), (136, 20504), (140, 20522), (144, 20573), (152, 20621), (155, 20666), (159, 20750),

Gene: RosePharie_2 Start: 2633, Stop: 3526, Start Num: 55
Candidate Starts for RosePharie_2:
(Start: 55 @2633 has 34 MA's), (67, 2762), (68, 2765), (70, 2780), (78, 2858), (80, 2876), (86, 2933), (87, 2945), (100, 3074), (113, 3191), (124, 3230), (149, 3353),

Gene: SV1_21 Start: 16368, Stop: 17315, Start Num: 55
Candidate Starts for SV1_21:
(Start: 55 @16368 has 34 MA's), (66, 16488), (69, 16503), (73, 16539), (78, 16593), (81, 16614), (86, 16668), (106, 16863), (112, 16905), (113, 16917), (114, 16926),

Gene: Salete_27 Start: 25552, Stop: 26814, Start Num: 13
Candidate Starts for Salete_27:

(Start: 13 @25552 has 9 MA's), (14, 25564), (18, 25684), (19, 25687), (28, 25795), (43, 25882), (50, 25921), (65, 26029), (70, 26053), (71, 26062), (75, 26095), (79, 26125), (96, 26302), (99, 26320), (100, 26326), (105, 26356), (136, 26533), (147, 26611), (149, 26620), (154, 26689), (155, 26695), (164, 26809),

Gene: Sarkar_118 Start: 77529, Stop: 78614, Start Num: 55
Candidate Starts for Sarkar_118:
(46, 77490), (Start: 55 @77529 has 34 MA's), (56, 77541), (58, 77559), (66, 77649), (67, 77658), (70, 77676), (73, 77700), (92, 77883), (94, 77925), (113, 78078), (114, 78087), (117, 78099), (122, 78168), (127, 78213), (128, 78219), (130, 78294), (133, 78324), (136, 78336), (140, 78354), (150, 78435),

Gene: SassyC_30 Start: 20015, Stop: 20932, Start Num: 55
Candidate Starts for SassyC_30:
(30, 19877), (33, 19907), (Start: 55 @20015 has 34 MA's), (82, 20264), (84, 20297), (86, 20312), (93, 20402), (109, 20528), (113, 20561), (131, 20621), (136, 20648), (144, 20717), (159, 20879),

Gene: Satis_118 Start: 77525, Stop: 78610, Start Num: 55
Candidate Starts for Satis_118:
(46, 77486), (Start: 55 @77525 has 34 MA's), (56, 77537), (58, 77555), (66, 77645), (67, 77654), (70, 77672), (73, 77696), (92, 77879), (94, 77921), (113, 78074), (114, 78083), (117, 78095), (122, 78164), (127, 78209), (128, 78215), (130, 78290), (133, 78320), (136, 78332), (140, 78350), (150, 78431),

Gene: Schlegelian_20 Start: 16993, Stop: 17943, Start Num: 55
Candidate Starts for Schlegelian_20:
(45, 16960), (Start: 49 @16978 has 6 MA's), (Start: 55 @16993 has 34 MA's), (60, 17047), (66, 17113), (69, 17128), (73, 17164), (78, 17218), (81, 17239), (87, 17305), (101, 17455), (104, 17473), (106, 17506), (113, 17560), (117, 17581), (151, 17770),

Gene: ShakeNBake_28 Start: 19702, Stop: 20631, Start Num: 55
Candidate Starts for ShakeNBake_28:
(42, 19645), (Start: 55 @19702 has 34 MA's), (61, 19762), (67, 19837), (72, 19870), (82, 19951), (86, 19999), (92, 20053), (93, 20086), (113, 20245), (136, 20332), (140, 20350), (144, 20401), (152, 20449), (155, 20494), (159, 20578),

Gene: TP1604_27 Start: 25552, Stop: 26814, Start Num: 13
Candidate Starts for TP1604_27:
(Start: 13 @25552 has 9 MA's), (14, 25564), (18, 25684), (19, 25687), (28, 25795), (43, 25882), (50, 25921), (65, 26029), (70, 26053), (71, 26062), (75, 26095), (79, 26125), (96, 26302), (99, 26320), (100, 26326), (105, 26356), (136, 26533), (147, 26611), (149, 26620), (154, 26689), (155, 26695), (164, 26809),

Gene: Virizion_32 Start: 20133, Stop: 21002, Start Num: 61
Candidate Starts for Virizion_32:
(42, 20016), (Start: 55 @20073 has 34 MA's), (61, 20133), (72, 20241), (82, 20322), (86, 20370), (92, 20424), (93, 20457), (113, 20616), (136, 20703), (140, 20721), (144, 20772), (152, 20820), (155, 20865), (159, 20949),

Gene: Vondra_20 Start: 17009, Stop: 17959, Start Num: 55
Candidate Starts for Vondra_20:
(Start: 55 @17009 has 34 MA's), (60, 17063), (69, 17144), (73, 17180), (78, 17234), (81, 17255), (87, 17321), (101, 17471), (104, 17489), (106, 17522), (113, 17576), (117, 17597), (151, 17786),

Gene: Wentworth_29 Start: 20065, Stop: 20982, Start Num: 55

Candidate Starts for Wentworth_29:
(44, 20017), (Start: 55 @20065 has 34 MA's), (82, 20314), (84, 20347), (86, 20362), (93, 20452), (109, 20578), (113, 20611), (117, 20632), (140, 20716), (144, 20767), (159, 20929),

Gene: Wilkos_29 Start: 19977, Stop: 20894, Start Num: 55
Candidate Starts for Wilkos_29:
(Start: 55 @19977 has 34 MA's), (82, 20226), (84, 20259), (86, 20274), (93, 20364), (113, 20523), (130, 20580), (140, 20628), (144, 20679), (159, 20841),

Gene: Xkcd426_33 Start: 33252, Stop: 34259, Start Num: 55
Candidate Starts for Xkcd426_33:
(3, 32271), (4, 32316), (5, 32346), (6, 32418), (8, 32517), (31, 33123), (46, 33213), (Start: 55 @33252 has 34 MA's), (68, 33384), (104, 33729), (105, 33753), (108, 33774), (114, 33825), (119, 33876), (129, 33930), (134, 33972), (136, 33975), (147, 34053), (149, 34062),

Gene: YDN12_29 Start: 25515, Stop: 26783, Start Num: 13
Candidate Starts for YDN12_29:
(11, 25356), (Start: 13 @25515 has 9 MA's), (14, 25527), (16, 25635), (18, 25647), (19, 25650), (39, 25824), (43, 25845), (50, 25884), (57, 25920), (65, 25992), (70, 26016), (71, 26025), (75, 26058), (79, 26088), (96, 26268), (99, 26286), (100, 26292), (105, 26322), (121, 26439), (134, 26496), (136, 26499), (139, 26514), (147, 26577), (149, 26586), (155, 26661), (158, 26715), (164, 26775),

Gene: Yara_25 Start: 19303, Stop: 20226, Start Num: 53
Candidate Starts for Yara_25:
(Start: 53 @19303 has 1 MA's), (58, 19333), (62, 19372), (66, 19429), (67, 19438), (68, 19441), (73, 19480), (113, 19879), (114, 19888), (146, 20041),

Gene: Yosif_28 Start: 22917, Stop: 23870, Start Num: 54
Candidate Starts for Yosif_28:
(23, 22689), (28, 22770), (32, 22803), (Start: 54 @22917 has 1 MA's), (56, 22932), (58, 22950), (60, 22974), (66, 23049), (67, 23058), (82, 23172), (88, 23250), (92, 23280), (118, 23496), (120, 23517), (140, 23619), (141, 23637), (153, 23721),

Gene: pZL12_44c Start: 32427, Stop: 31489, Start Num: 55
Candidate Starts for pZL12_44c:
(41, 32484), (Start: 55 @32427 has 34 MA's), (66, 32307), (67, 32298), (68, 32295), (70, 32280), (113, 31875), (114, 31866),