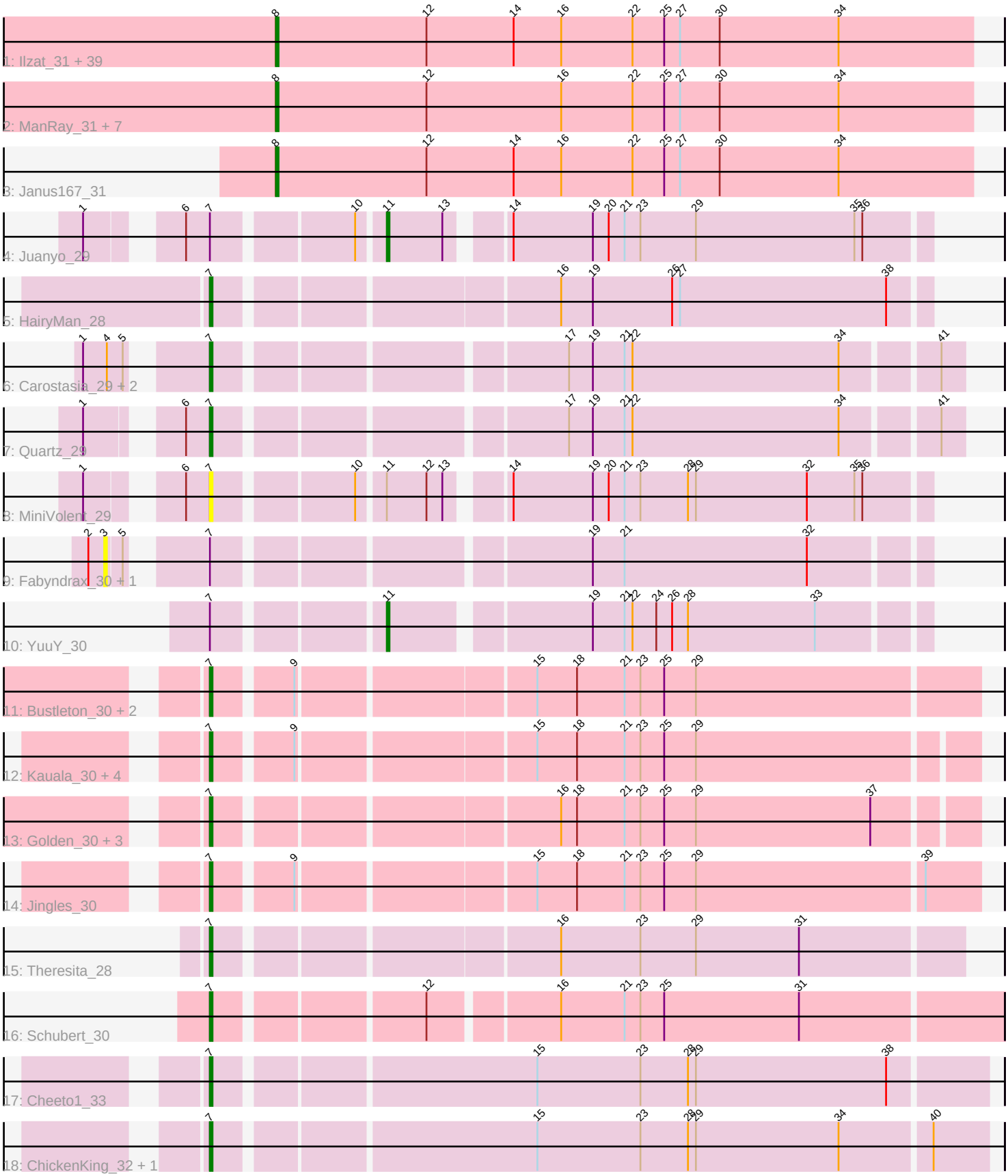
Pham 345665


1: Ilzat_31 + 39
2: ManRay_31 + 7
3: Janus167_31
4: Juanyo_29
5: HairyMan_28
6: Carostasia_29 + 2
7: Quartz_29
8: MiniVolent_29
9: Fabyndrax_30 + 1
10: YuuY_30
11: Bustleton_30 + 2
12: Kauala_30 + 4
13: Golden_30 + 3
14: Jingles_30
15: Theresita_28
16: Schubert_30
17: Cheeto1_33
18: ChickenKing_32 + 1

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 345665 Report

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

Pham number 345665 has 77 members, 6 are drafts.

Phages represented in each track:
• Track 1 : Ilzat_31, Sedgewig_31, CoraRita_31, SonOfLevi_31, AranulaLuti_31, Calix_31, Chamuel_31, Nattles_31, Gubbabump_31, Winzigespinne_31, Exploradora_31, Gelo_31, JeriBeth_31, Klimt_31, Etta_31, KannH_31, Benjalauren_32, Christoph_31, StingRay_31, HanSolo_31, Erla_31, RosieMae_31, Papafritta_31, Duocatuli_31, Clancy_31, Symere_31, Kouch_31, Baines_31, Bonino_31, JasperRussell_31, Kale_31, StirfryIV_31, Chako_31, Jerbirus_32, HankSprout_32, HungryHenry_31, Rog141_31, Pocket_31, Garey24_31, KellyGreen_32
• Track 2 : ManRay_31, Asta_31, Gershwin_31, TeddyBear_31, Tenda_31, Oats_31, Espinosa_31, Aubergine_31
• Track 3 : Janus167_31
• Track 4 : Juanyo_29
• Track 5 : HairyMan_28
• Track 6 : Carostasia_29, Mandalorian_29, Nucci_29
• Track 7 : Quartz_29
• Track 8 : MiniVolent_29
• Track 9 : Fabyndrax_30, Cidela_30
• Track 10 : YuuY_30
• Track 11 : Bustleton_30, Sinatra_30, Pherbot_30
• Track 12 : Kauala_30, PrincePhergus_30, BouleyBill_30, Koji_30, RenegadeRaider_31
• Track 13 : Golden_30, Lucky3_30, Guetzie_30, SirVictor_30
• Track 14 : Jingles_30
• Track 15 : Theresita_28
• Track 16 : Schubert_30
• Track 17 : Cheeto1_33
• Track 18 : ChickenKing_32, GaeCeo_33

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

The start number called the most often in the published annotations is 8, it was called in 47 of the 71 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• AranulaLuti_31, Asta_31, Aubergine_31, Baines_31, Benjalauren_32, Bonino_31, Calix_31, Chako_31, Chamuel_31, Christoph_31, Clancy_31, CoraRita_31, Duocatuli_31, Erla_31, Espinosa_31, Etta_31, Exploradora_31, Garey24_31, Gelo_31, Gershwin_31, Gubbabump_31, HanSolo_31, HankSprout_32, HungryHenry_31, Ilzat_31, Janus167_31, JasperRussell_31, Jerbirus_32, JeriBeth_31, Kale_31, KannH_31, KellyGreen_32, Klimt_31, Kouch_31, ManRay_31, Nattles_31, Oats_31, Papafritta_31, Pocket_31, Rog141_31, RosieMae_31, Sedgewig_31, SonOfLevi_31, StingRay_31, StirfryIV_31, Symere_31, TeddyBear_31, Tenda_31, Winzigespinne_31,

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

Genes that do not have the "Most Annotated" start:
• BouleyBill_30, Bustleton_30, Carostasia_29, Cheeto1_33, ChickenKing_32, Cidela_30, Fabyndrax_30, GaeCeo_33, Golden_30, Guetzie_30, HairyMan_28, Jingles_30, Juanyo_29, Kauala_30, Koji_30, Lucky3_30, Mandalorian_29, MiniVolent_29, Nucci_29, Pherbot_30, PrincePhergus_30, Quartz_29, RenegadeRaider_31, Schubert_30, Sinatra_30, SirVictor_30, Theresita_28, YuuY_30,

Summary by start number:

Start 3:
• Found in 2 of 77 (2.6%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Cidela_30 (EA10), Fabyndrax_30 (EA10),

Start 7:
• Found in 28 of 77 (36.4%) of genes in pham
• Manual Annotations of this start: 22 of 71
• Called 85.7% of time when present
• Phage (with cluster) where this start called: BouleyBill_30 (EA4), Bustleton_30 (EA4), Carostasia_29 (EA10), Cheeto1_33 (EA9), ChickenKing_32 (EA9), GaeCeo_33 (EA9), Golden_30 (EA4), Guetzie_30 (EA4), HairyMan_28 (EA10), Jingles_30 (EA4), Kauala_30 (EA4), Koji_30 (EA4), Lucky3_30 (EA4), Mandalorian_29 (EA10), MiniVolent_29 (EA10), Nucci_29 (EA10), Pherbot_30 (EA4), PrincePhergus_30 (EA4), Quartz_29 (EA10), RenegadeRaider_31 (EA4), Schubert_30 (EA8), Sinatra_30 (EA4), SirVictor_30 (EA4), Theresita_28 (EA7),

Start 8:
• Found in 49 of 77 (63.6%) of genes in pham
• Manual Annotations of this start: 47 of 71
• Called 100.0% of time when present
• Phage (with cluster) where this start called: AranulaLuti_31 (EA1), Asta_31 (EA1), Aubergine_31 (EA1), Baines_31 (EA1), Benjalauren_32 (EA1), Bonino_31 (EA1), Calix_31 (EA1), Chako_31 (EA1), Chamuel_31 (EA1), Christoph_31 (EA1), Clancy_31 (EA1), CoraRita_31 (EA1), Duocatuli_31 (EA1), Erla_31 (EA1), Espinosa_31 (EA1), Etta_31 (EA1), Exploradora_31 (EA1), Garey24_31 (EA1), Gelo_31 (EA1), Gershwin_31 (EA1), Gubbabump_31 (EA1), HanSolo_31 (EA1), HankSprout_32 (EA1), HungryHenry_31 (EA1), Ilzat_31 (EA1), Janus167_31 (EA1),

JasperRussell_31 (EA1), Jerbirus_32 (EA1), JeriBeth_31 (EA1), Kale_31 (EA1), KannH_31 (EA1), KellyGreen_32 (EA1), Klimt_31 (EA1), Kouch_31 (EA1), ManRay_31 (EA1), Nattles_31 (EA1), Oats_31 (EA1), Papafritta_31 (EA1), Pocket_31 (EA1), Rog141_31 (EA1), RosieMae_31 (EA1), Sedgewig_31 (EA1), SonOfLevi_31 (EA1), StingRay_31 (EA1), StirfryIV_31 (EA1), Symere_31 (EA1), TeddyBear_31 (EA1), Tenda_31 (EA1), Winzigespinne_31 (EA1),

Start 11:
• Found in 3 of 77 (3.9%) of genes in pham
• Manual Annotations of this start: 2 of 71
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Juanyo_29 (EA10), YuuY_30 (EA10),

Summary by clusters:

There are 6 clusters represented in this pham: EA10, EA9, EA8, EA1, EA4, EA7,

Info for manual annotations of cluster EA1:
•Start number 8 was manually annotated 47 times for cluster EA1.

Info for manual annotations of cluster EA10:
•Start number 7 was manually annotated 5 times for cluster EA10.
•Start number 11 was manually annotated 2 times for cluster EA10.

Info for manual annotations of cluster EA4:
•Start number 7 was manually annotated 12 times for cluster EA4.

Info for manual annotations of cluster EA7:
•Start number 7 was manually annotated 1 time for cluster EA7.

Info for manual annotations of cluster EA8:
•Start number 7 was manually annotated 1 time for cluster EA8.

Info for manual annotations of cluster EA9:
•Start number 7 was manually annotated 3 times for cluster EA9.

Gene Information:

Gene: AranulaLuti_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for AranulaLuti_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Asta_31 Start: 21919, Stop: 21656, Start Num: 8
Candidate Starts for Asta_31:
(Start: 8 @21919 has 47 MA's), (12, 21862), (16, 21811), (22, 21784), (25, 21772), (27, 21766), (30, 21751), (34, 21706),

Gene: Aubergine_31 Start: 21919, Stop: 21656, Start Num: 8
Candidate Starts for Aubergine_31:

(Start: 8 @21919 has 47 MA's), (12, 21862), (16, 21811), (22, 21784), (25, 21772), (27, 21766), (30, 21751), (34, 21706),

Gene: Baines_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Baines_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Benjalauren_32 Start: 21916, Stop: 21653, Start Num: 8
Candidate Starts for Benjalauren_32:
(Start: 8 @21916 has 47 MA's), (12, 21859), (14, 21826), (16, 21808), (22, 21781), (25, 21769), (27, 21763), (30, 21748), (34, 21703),

Gene: Bonino_31 Start: 21895, Stop: 21632, Start Num: 8
Candidate Starts for Bonino_31:
(Start: 8 @21895 has 47 MA's), (12, 21838), (14, 21805), (16, 21787), (22, 21760), (25, 21748), (27, 21742), (30, 21727), (34, 21682),

Gene: BouleyBill_30 Start: 21998, Stop: 21723, Start Num: 7
Candidate Starts for BouleyBill_30:
(Start: 7 @21998 has 22 MA's), (9, 21971), (15, 21887), (18, 21872), (21, 21854), (23, 21848), (25, 21839), (29, 21827),

Gene: Bustleton_30 Start: 21998, Stop: 21723, Start Num: 7
Candidate Starts for Bustleton_30:
(Start: 7 @21998 has 22 MA's), (9, 21971), (15, 21887), (18, 21872), (21, 21854), (23, 21848), (25, 21839), (29, 21827),

Gene: Calix_31 Start: 21899, Stop: 21636, Start Num: 8
Candidate Starts for Calix_31:
(Start: 8 @21899 has 47 MA's), (12, 21842), (14, 21809), (16, 21791), (22, 21764), (25, 21752), (27, 21746), (30, 21731), (34, 21686),

Gene: Carostasia_29 Start: 21669, Stop: 21406, Start Num: 7
Candidate Starts for Carostasia_29:
(1, 21705), (4, 21696), (5, 21690), (Start: 7 @21669 has 22 MA's), (17, 21549), (19, 21540), (21, 21528), (22, 21525), (34, 21447), (41, 21414),

Gene: Chako_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Chako_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Chamuel_31 Start: 21901, Stop: 21638, Start Num: 8
Candidate Starts for Chamuel_31:
(Start: 8 @21901 has 47 MA's), (12, 21844), (14, 21811), (16, 21793), (22, 21766), (25, 21754), (27, 21748), (30, 21733), (34, 21688),

Gene: Cheeto1_33 Start: 22587, Stop: 22306, Start Num: 7
Candidate Starts for Cheeto1_33:
(Start: 7 @22587 has 22 MA's), (15, 22473), (23, 22434), (28, 22416), (29, 22413), (38, 22341),

Gene: ChickenKing_32 Start: 22500, Stop: 22219, Start Num: 7

Candidate Starts for ChickenKing_32:
(Start: 7 @22500 has 22 MA's), (15, 22386), (23, 22347), (28, 22329), (29, 22326), (34, 22272), (40, 22239),

Gene: Christoph_31 Start: 21917, Stop: 21654, Start Num: 8
Candidate Starts for Christoph_31:
(Start: 8 @21917 has 47 MA's), (12, 21860), (14, 21827), (16, 21809), (22, 21782), (25, 21770), (27, 21764), (30, 21749), (34, 21704),

Gene: Cidela_30 Start: 22787, Stop: 22509, Start Num: 3
Candidate Starts for Cidela_30:
(2, 22793), (3, 22787), (5, 22781), (Start: 7 @22760 has 22 MA's), (19, 22631), (21, 22619), (32, 22550),

Gene: Clancy_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Clancy_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: CoraRita_31 Start: 21915, Stop: 21652, Start Num: 8
Candidate Starts for CoraRita_31:
(Start: 8 @21915 has 47 MA's), (12, 21858), (14, 21825), (16, 21807), (22, 21780), (25, 21768), (27, 21762), (30, 21747), (34, 21702),

Gene: Duocatuli_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Duocatuli_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Erla_31 Start: 21899, Stop: 21636, Start Num: 8
Candidate Starts for Erla_31:
(Start: 8 @21899 has 47 MA's), (12, 21842), (14, 21809), (16, 21791), (22, 21764), (25, 21752), (27, 21746), (30, 21731), (34, 21686),

Gene: Espinosa_31 Start: 21917, Stop: 21654, Start Num: 8
Candidate Starts for Espinosa_31:
(Start: 8 @21917 has 47 MA's), (12, 21860), (16, 21809), (22, 21782), (25, 21770), (27, 21764), (30, 21749), (34, 21704),

Gene: Etta_31 Start: 21903, Stop: 21640, Start Num: 8
Candidate Starts for Etta_31:
(Start: 8 @21903 has 47 MA's), (12, 21846), (14, 21813), (16, 21795), (22, 21768), (25, 21756), (27, 21750), (30, 21735), (34, 21690),

Gene: Exploradora_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Exploradora_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Fabyndrax_30 Start: 22787, Stop: 22509, Start Num: 3
Candidate Starts for Fabyndrax_30:
(2, 22793), (3, 22787), (5, 22781), (Start: 7 @22760 has 22 MA's), (19, 22631), (21, 22619), (32, 22550),

Gene: GaeCeo_33 Start: 22736, Stop: 22455, Start Num: 7
Candidate Starts for GaeCeo_33:
(Start: 7 @22736 has 22 MA's), (15, 22622), (23, 22583), (28, 22565), (29, 22562), (34, 22508), (40, 22475),

Gene: Garey24_31 Start: 21882, Stop: 21619, Start Num: 8
Candidate Starts for Garey24_31:
(Start: 8 @21882 has 47 MA's), (12, 21825), (14, 21792), (16, 21774), (22, 21747), (25, 21735), (27, 21729), (30, 21714), (34, 21669),

Gene: Gelo_31 Start: 21903, Stop: 21640, Start Num: 8
Candidate Starts for Gelo_31:
(Start: 8 @21903 has 47 MA's), (12, 21846), (14, 21813), (16, 21795), (22, 21768), (25, 21756), (27, 21750), (30, 21735), (34, 21690),

Gene: Gershwin_31 Start: 21919, Stop: 21656, Start Num: 8
Candidate Starts for Gershwin_31:
(Start: 8 @21919 has 47 MA's), (12, 21862), (16, 21811), (22, 21784), (25, 21772), (27, 21766), (30, 21751), (34, 21706),

Gene: Golden_30 Start: 22099, Stop: 21827, Start Num: 7
Candidate Starts for Golden_30:
(Start: 7 @22099 has 22 MA's), (16, 21979), (18, 21973), (21, 21955), (23, 21949), (25, 21940), (29, 21928), (37, 21862),

Gene: Gubbabump_31 Start: 21908, Stop: 21645, Start Num: 8
Candidate Starts for Gubbabump_31:
(Start: 8 @21908 has 47 MA's), (12, 21851), (14, 21818), (16, 21800), (22, 21773), (25, 21761), (27, 21755), (30, 21740), (34, 21695),

Gene: Guetzie_30 Start: 22087, Stop: 21815, Start Num: 7
Candidate Starts for Guetzie_30:
(Start: 7 @22087 has 22 MA's), (16, 21967), (18, 21961), (21, 21943), (23, 21937), (25, 21928), (29, 21916), (37, 21850),

Gene: HairyMan_28 Start: 21239, Stop: 20982, Start Num: 7
Candidate Starts for HairyMan_28:
(Start: 7 @21239 has 22 MA's), (16, 21119), (19, 21107), (26, 21077), (27, 21074), (38, 20996),

Gene: HanSolo_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for HanSolo_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: HankSprout_32 Start: 21786, Stop: 21523, Start Num: 8
Candidate Starts for HankSprout_32:
(Start: 8 @21786 has 47 MA's), (12, 21729), (14, 21696), (16, 21678), (22, 21651), (25, 21639), (27, 21633), (30, 21618), (34, 21573),

Gene: HungryHenry_31 Start: 21917, Stop: 21654, Start Num: 8
Candidate Starts for HungryHenry_31:

(Start: 8 @21917 has 47 MA's), (12, 21860), (14, 21827), (16, 21809), (22, 21782), (25, 21770), (27, 21764), (30, 21749), (34, 21704),

Gene: Ilzat_31 Start: 21916, Stop: 21653, Start Num: 8
Candidate Starts for Ilzat_31:
(Start: 8 @21916 has 47 MA's), (12, 21859), (14, 21826), (16, 21808), (22, 21781), (25, 21769), (27, 21763), (30, 21748), (34, 21703),

Gene: Janus167_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Janus167_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: JasperRussell_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for JasperRussell_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Jerbirus_32 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Jerbirus_32:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: JeriBeth_31 Start: 21763, Stop: 21500, Start Num: 8
Candidate Starts for JeriBeth_31:
(Start: 8 @21763 has 47 MA's), (12, 21706), (14, 21673), (16, 21655), (22, 21628), (25, 21616), (27, 21610), (30, 21595), (34, 21550),

Gene: Jingles_30 Start: 22005, Stop: 21730, Start Num: 7
Candidate Starts for Jingles_30:
(Start: 7 @22005 has 22 MA's), (9, 21978), (15, 21894), (18, 21879), (21, 21861), (23, 21855), (25, 21846), (29, 21834), (39, 21750),

Gene: Juanyo_29 Start: 21545, Stop: 21351, Start Num: 11
Candidate Starts for Juanyo_29:
(1, 21638), (6, 21611), (Start: 7 @21602 has 22 MA's), (10, 21554), (Start: 11 @21545 has 2 MA's), (13, 21524), (14, 21506), (19, 21476), (20, 21470), (21, 21464), (23, 21458), (29, 21437), (35, 21377), (36, 21374),

Gene: Kale_31 Start: 21921, Stop: 21658, Start Num: 8
Candidate Starts for Kale_31:
(Start: 8 @21921 has 47 MA's), (12, 21864), (14, 21831), (16, 21813), (22, 21786), (25, 21774), (27, 21768), (30, 21753), (34, 21708),

Gene: KannH_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for KannH_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Kauala_30 Start: 21991, Stop: 21719, Start Num: 7
Candidate Starts for Kauala_30:
(Start: 7 @21991 has 22 MA's), (9, 21964), (15, 21880), (18, 21865), (21, 21847), (23, 21841), (25, 21832), (29, 21820),

Gene: KellyGreen_32 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for KellyGreen_32:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Klimt_31 Start: 21901, Stop: 21638, Start Num: 8
Candidate Starts for Klimt_31:
(Start: 8 @21901 has 47 MA's), (12, 21844), (14, 21811), (16, 21793), (22, 21766), (25, 21754), (27, 21748), (30, 21733), (34, 21688),

Gene: Koji_30 Start: 22126, Stop: 21851, Start Num: 7
Candidate Starts for Koji_30:
(Start: 7 @22126 has 22 MA's), (9, 22099), (15, 22015), (18, 22000), (21, 21982), (23, 21976), (25, 21967), (29, 21955),

Gene: Kouch_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Kouch_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Lucky3_30 Start: 22099, Stop: 21827, Start Num: 7
Candidate Starts for Lucky3_30:
(Start: 7 @22099 has 22 MA's), (16, 21979), (18, 21973), (21, 21955), (23, 21949), (25, 21940), (29, 21928), (37, 21862),

Gene: ManRay_31 Start: 21919, Stop: 21656, Start Num: 8
Candidate Starts for ManRay_31:
(Start: 8 @21919 has 47 MA's), (12, 21862), (16, 21811), (22, 21784), (25, 21772), (27, 21766), (30, 21751), (34, 21706),

Gene: Mandalorian_29 Start: 21667, Stop: 21404, Start Num: 7
Candidate Starts for Mandalorian_29:
(1, 21703), (4, 21694), (5, 21688), (Start: 7 @21667 has 22 MA's), (17, 21547), (19, 21538), (21, 21526), (22, 21523), (34, 21445), (41, 21412),

Gene: MiniVolent_29 Start: 21561, Stop: 21310, Start Num: 7
Candidate Starts for MiniVolent_29:
(1, 21597), (6, 21570), (Start: 7 @21561 has 22 MA's), (10, 21513), (Start: 11 @21504 has 2 MA's), (12, 21489), (13, 21483), (14, 21465), (19, 21435), (20, 21429), (21, 21423), (23, 21417), (28, 21399), (29, 21396), (32, 21354), (35, 21336), (36, 21333),

Gene: Nattles_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Nattles_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Nucci_29 Start: 21656, Stop: 21393, Start Num: 7
Candidate Starts for Nucci_29:
(1, 21692), (4, 21683), (5, 21677), (Start: 7 @21656 has 22 MA's), (17, 21536), (19, 21527), (21, 21515), (22, 21512), (34, 21434), (41, 21401),

Gene: Oats_31 Start: 21919, Stop: 21656, Start Num: 8

Candidate Starts for Oats_31:
(Start: 8 @21919 has 47 MA's), (12, 21862), (16, 21811), (22, 21784), (25, 21772), (27, 21766), (30, 21751), (34, 21706),

Gene: Papafritta_31 Start: 21915, Stop: 21652, Start Num: 8
Candidate Starts for Papafritta_31:
(Start: 8 @21915 has 47 MA's), (12, 21858), (14, 21825), (16, 21807), (22, 21780), (25, 21768), (27, 21762), (30, 21747), (34, 21702),

Gene: Pherbot_30 Start: 21997, Stop: 21722, Start Num: 7
Candidate Starts for Pherbot_30:
(Start: 7 @21997 has 22 MA's), (9, 21970), (15, 21886), (18, 21871), (21, 21853), (23, 21847), (25, 21838), (29, 21826),

Gene: Pocket_31 Start: 21904, Stop: 21641, Start Num: 8
Candidate Starts for Pocket_31:
(Start: 8 @21904 has 47 MA's), (12, 21847), (14, 21814), (16, 21796), (22, 21769), (25, 21757), (27, 21751), (30, 21736), (34, 21691),

Gene: PrincePhergus_30 Start: 22000, Stop: 21725, Start Num: 7
Candidate Starts for PrincePhergus_30:
(Start: 7 @22000 has 22 MA's), (9, 21973), (15, 21889), (18, 21874), (21, 21856), (23, 21850), (25, 21841), (29, 21829),

Gene: Quartz_29 Start: 21669, Stop: 21406, Start Num: 7
Candidate Starts for Quartz_29:
(1, 21705), (6, 21678), (Start: 7 @21669 has 22 MA's), (17, 21549), (19, 21540), (21, 21528), (22, 21525), (34, 21447), (41, 21414),

Gene: RenegadeRaider_31 Start: 21843, Stop: 21568, Start Num: 7
Candidate Starts for RenegadeRaider_31:
(Start: 7 @21843 has 22 MA's), (9, 21816), (15, 21732), (18, 21717), (21, 21699), (23, 21693), (25, 21684), (29, 21672),

Gene: Rog141_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for Rog141_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: RosieMae_31 Start: 21916, Stop: 21653, Start Num: 8
Candidate Starts for RosieMae_31:
(Start: 8 @21916 has 47 MA's), (12, 21859), (14, 21826), (16, 21808), (22, 21781), (25, 21769), (27, 21763), (30, 21748), (34, 21703),

Gene: Schubert_30 Start: 22008, Stop: 21727, Start Num: 7
Candidate Starts for Schubert_30:
(Start: 7 @22008 has 22 MA's), (12, 21936), (16, 21891), (21, 21867), (23, 21861), (25, 21852), (31, 21801),

Gene: Sedgewig_31 Start: 21898, Stop: 21635, Start Num: 8
Candidate Starts for Sedgewig_31:
(Start: 8 @21898 has 47 MA's), (12, 21841), (14, 21808), (16, 21790), (22, 21763), (25, 21751), (27, 21745), (30, 21730), (34, 21685),

Gene: Sinatra_30 Start: 21996, Stop: 21721, Start Num: 7
Candidate Starts for Sinatra_30:
(Start: 7 @21996 has 22 MA's), (9, 21969), (15, 21885), (18, 21870), (21, 21852), (23, 21846), (25, 21837), (29, 21825),

Gene: SirVictor_30 Start: 22087, Stop: 21815, Start Num: 7
Candidate Starts for SirVictor_30:
(Start: 7 @22087 has 22 MA's), (16, 21967), (18, 21961), (21, 21943), (23, 21937), (25, 21928), (29, 21916), (37, 21850),

Gene: SonOfLevi_31 Start: 21901, Stop: 21638, Start Num: 8
Candidate Starts for SonOfLevi_31:
(Start: 8 @21901 has 47 MA's), (12, 21844), (14, 21811), (16, 21793), (22, 21766), (25, 21754), (27, 21748), (30, 21733), (34, 21688),

Gene: StingRay_31 Start: 21916, Stop: 21653, Start Num: 8
Candidate Starts for StingRay_31:
(Start: 8 @21916 has 47 MA's), (12, 21859), (14, 21826), (16, 21808), (22, 21781), (25, 21769), (27, 21763), (30, 21748), (34, 21703),

Gene: StirfryIV_31 Start: 21906, Stop: 21643, Start Num: 8
Candidate Starts for StirfryIV_31:
(Start: 8 @21906 has 47 MA's), (12, 21849), (14, 21816), (16, 21798), (22, 21771), (25, 21759), (27, 21753), (30, 21738), (34, 21693),

Gene: Symere_31 Start: 21896, Stop: 21633, Start Num: 8
Candidate Starts for Symere_31:
(Start: 8 @21896 has 47 MA's), (12, 21839), (14, 21806), (16, 21788), (22, 21761), (25, 21749), (27, 21743), (30, 21728), (34, 21683),

Gene: TeddyBear_31 Start: 21919, Stop: 21656, Start Num: 8
Candidate Starts for TeddyBear_31:
(Start: 8 @21919 has 47 MA's), (12, 21862), (16, 21811), (22, 21784), (25, 21772), (27, 21766), (30, 21751), (34, 21706),

Gene: Tenda_31 Start: 21917, Stop: 21654, Start Num: 8
Candidate Starts for Tenda_31:
(Start: 8 @21917 has 47 MA's), (12, 21860), (16, 21809), (22, 21782), (25, 21770), (27, 21764), (30, 21749), (34, 21704),

Gene: Theresita_28 Start: 20735, Stop: 20466, Start Num: 7
Candidate Starts for Theresita_28:
(Start: 7 @20735 has 22 MA's), (16, 20615), (23, 20585), (29, 20564), (31, 20525),

Gene: Winzigespinne_31 Start: 21905, Stop: 21642, Start Num: 8
Candidate Starts for Winzigespinne_31:
(Start: 8 @21905 has 47 MA's), (12, 21848), (14, 21815), (16, 21797), (22, 21770), (25, 21758), (27, 21752), (30, 21737), (34, 21692),

Gene: YuuY_30 Start: 22217, Stop: 22026, Start Num: 11
Candidate Starts for YuuY_30:

(Start: 7 @22274 has 22 MA's), (Start: 11 @22217 has 2 MA's), (19, 22148), (21, 22136), (22, 22133), (24, 22124), (26, 22118), (28, 22112), (33, 22064),