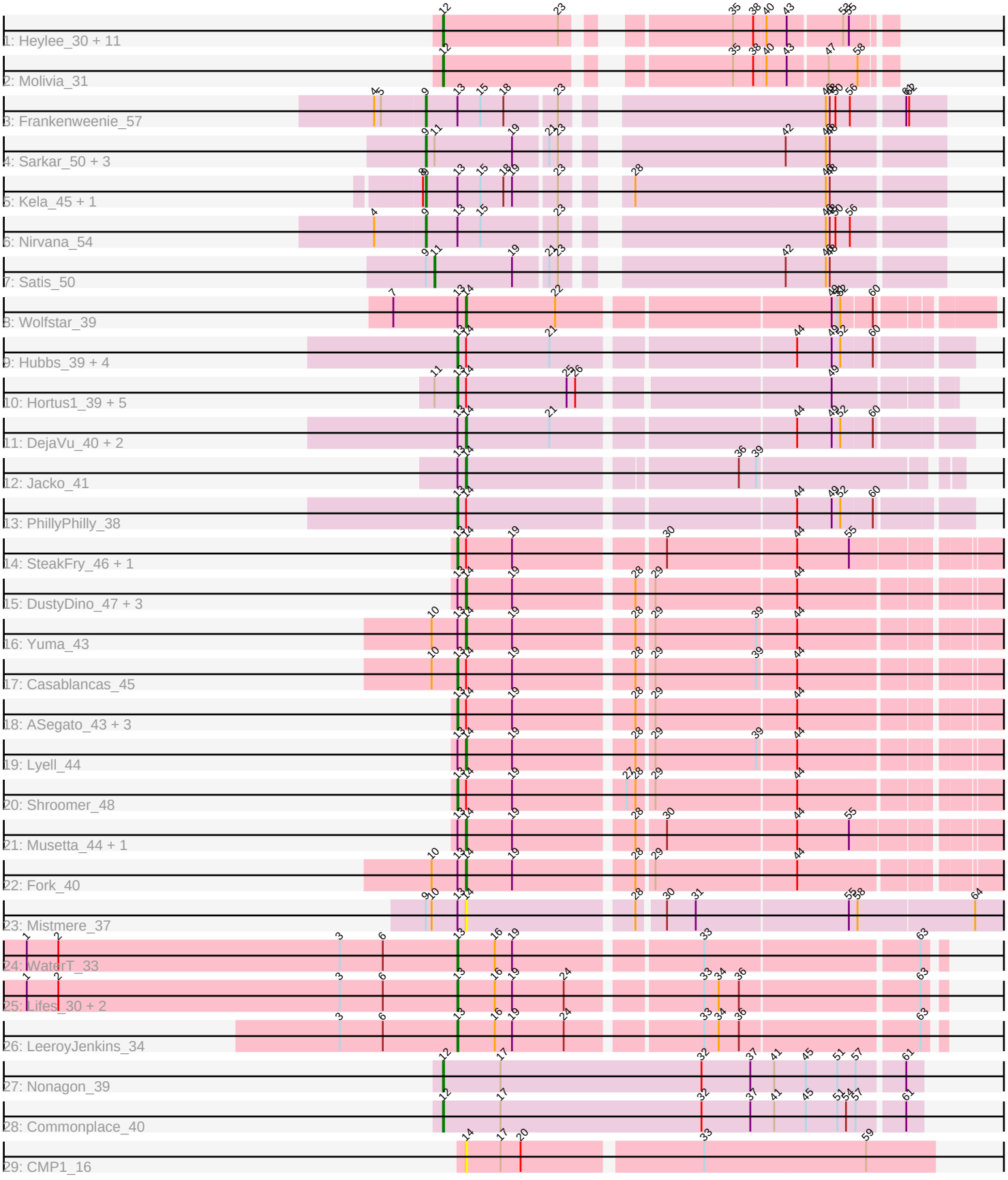
Pham 345730


1: Heylee_30 + 11
2: Molivia_31
3: Frankenweenie_57
4: Sarkar_50 + 3
5: Kela_45 + 1
6: Nirvana_54
7: Satis_50
8: Wolfstar_39
9: Hubbs_39 + 4
10: Hortus1_39 + 5
11: DejaVu_40 + 2
12: Jacko_41
13: PhillyPhilly_38
14: SteakFry_46 + 1
15: DustyDino_47 + 3
16: Yuma_43
17: Casablancas_45
18: ASegato_43 + 3
19: Lyell_44
20: Shroomer_48
21: Musetta_44 + 1
22: Fork_40
23: Mistmere_37
24: WaterT_33
25: Lifes_30 + 2
26: LeeroyJenkins_34
27: Nonagon_39
28: Commonplace_40
29: CMP1_16

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 345730 Report

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

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 345730 has 65 members, 6 are drafts.

Phages represented in each track:
- Track 1 : Heylee_30, Gorgeous_27, Thunderclap_27, Ichor_26, Jaek_26, Anansi_27, SorJuana_27, Boersma_28, Amigo_27, Amavida_30, Rings_26, Yeezus_26
- Track 2 : Molivia_31
- Track 3 : Frankenweenie_57
- Track 4 : Sarkar_50, Quantum_49, Kradal_50, EhyElimayoE_50
- Track 5 : Kela_45, JustBecause_44
- Track 6 : Nirvana_54
- Track 7 : Satis_50
- Track 8 : Wolfstar_39
- Track 9 : Hubbs_39, Lupine_37, Pavlo_37, Uterion_42, Roman_39
- Track 10 : Hortus1_39, OlinDD_39, Pioneer3_39, Platte_39, Tandem_39, Alleb_40
- Track 11 : DejaVu_40, Solimine_39, Saradis_39
- Track 12 : Jacko_41
- Track 13 : PhillyPhilly_38
- Track 14 : SteakFry_46, HollowPurple_45
- Track 15 : DustyDino_47, Deschain_45, Necrophoxinus_46, Welcome_45
- Track 16 : Yuma_43
- Track 17 : Casablancas_45
- Track 18 : ASegato_43, RunningBrook_45, Erenyeager_44, StevieWelch_44
- Track 19 : Lyell_44
- Track 20 : Shroomer_48
- Track 21 : Musetta_44, Issa7_43
- Track 22 : Fork_40
- Track 23 : Mistmere_37
- Track 24 : WaterT_33
- Track 25 : Lifes_30, BarnCat_28, Cassita_34
- Track 26 : LeeroyJenkins_34
- Track 27 : Nonagon_39
- Track 28 : Commonplace_40
- Track 29 : CMP1_16

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

The start number called the most often in the published annotations is 13, it was called in 25 of the 59 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• ASegato_43, Alleb_40, BarnCat_28, Casablancas_45, Cassita_34, Erenyeager_44, HollowPurple_45, Hortus1_39, Hubbs_39, LeeroyJenkins_34, Lifes_30, Lupine_37, OlinDD_39, Pavlo_37, PhillyPhilly_38, Pioneer3_39, Platte_39, Roman_39, RunningBrook_45, Shroomer_48, SteakFry_46, StevieWelch_44, Tandem_39, Uterion_42, WaterT_33,

Genes that have the "Most Annotated" start but do not call it:
• DejaVu_40, Deschain_45, DustyDino_47, Fork_40, Frankenweenie_57, Issa7_43, Jacko_41, JustBecause_44, Kela_45, Lyell_44, Mistmere_37, Musetta_44, Necrophoxinus_46, Nirvana_54, Saradis_39, Solimine_39, Welcome_45, Wolfstar_39, Yuma_43,

Genes that do not have the "Most Annotated" start:
• Amavida_30, Amigo_27, Anansi_27, Boersma_28, CMP1_16, Commonplace_40, EhyElimayoE_50, Gorgeous_27, Heylee_30, Ichor_26, Jaek_26, Kradal_50, Molivia_31, Nonagon_39, Quantum_49, Rings_26, Sarkar_50, Satis_50, SorJuana_27, Thunderclap_27, Yeezus_26,

Summary by start number:

Start 9:
• Found in 10 of 65 (15.4%) of genes in pham
• Manual Annotations of this start: 8 of 59
• Called 80.0% of time when present
• Phage (with cluster) where this start called: EhyElimayoE_50 (BM), Frankenweenie_57 (BM), JustBecause_44 (BM), Kela_45 (BM), Kradal_50 (BM), Nirvana_54 (BM), Quantum_49 (BM), Sarkar_50 (BM),

Start 11:
• Found in 11 of 65 (16.9%) of genes in pham
• Manual Annotations of this start: 1 of 59
• Called 9.1% of time when present
• Phage (with cluster) where this start called: Satis_50 (BM),

Start 12:
• Found in 15 of 65 (23.1%) of genes in pham
• Manual Annotations of this start: 15 of 59
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amavida_30 (AQ), Amigo_27 (AQ), Anansi_27 (AQ), Boersma_28 (AQ), Commonplace_40 (JD), Gorgeous_27 (AQ), Heylee_30 (AQ), Ichor_26 (AQ), Jaek_26 (AQ), Molivia_31 (AQ), Nonagon_39 (JD), Rings_26 (AQ), SorJuana_27 (AQ), Thunderclap_27 (AQ), Yeezus_26 (AQ),

Start 13:
• Found in 44 of 65 (67.7%) of genes in pham
• Manual Annotations of this start: 25 of 59

• Called 56.8% of time when present
• Phage (with cluster) where this start called: ASegato_43 (ED2), Alleb_40 (ED1), BarnCat_28 (GB), Casablancas_45 (ED2), Cassita_34 (GB), Erenyeager_44 (ED2), HollowPurple_45 (ED2), Hortus1_39 (ED1), Hubbs_39 (ED1), LeeroyJenkins_34 (GB), Lifes_30 (GB), Lupine_37 (ED1), OlinDD_39 (ED1), Pavlo_37 (ED1), PhillyPhilly_38 (ED1), Pioneer3_39 (ED1), Platte_39 (ED1), Roman_39 (ED1), RunningBrook_45 (ED2), Shroomer_48 (ED2), SteakFry_46 (ED2), StevieWelch_44 (ED2), Tandem_39 (ED1), Uterion_42 (ED1), WaterT_33 (GB),

Start 14:
• Found in 36 of 65 (55.4%) of genes in pham
• Manual Annotations of this start: 10 of 59
• Called 44.4% of time when present
• Phage (with cluster) where this start called: CMP1_16 (singleton), DejaVu_40 (ED1), Deschain_45 (ED2), DustyDino_47 (ED2), Fork_40 (ED2), Issa7_43 (ED2), Jacko_41 (ED1), Lyell_44 (ED2), Mistmere_37 (ED3), Musetta_44 (ED2), Necrophoxinus_46 (ED2), Saradis_39 (ED1), Solimine_39 (ED1), Welcome_45 (ED2), Wolfstar_39 (ED), Yuma_43 (ED2),

Summary by clusters:

There are 9 clusters represented in this pham: ED2, singleton, ED, AQ, ED3, ED1, GB, BM, JD,

Info for manual annotations of cluster AQ:
•Start number 12 was manually annotated 13 times for cluster AQ.

Info for manual annotations of cluster BM:
•Start number 9 was manually annotated 8 times for cluster BM.
•Start number 11 was manually annotated 1 time for cluster BM.

Info for manual annotations of cluster ED:
•Start number 14 was manually annotated 1 time for cluster ED.

Info for manual annotations of cluster ED1:
•Start number 13 was manually annotated 12 times for cluster ED1.
•Start number 14 was manually annotated 2 times for cluster ED1.

Info for manual annotations of cluster ED2:
•Start number 13 was manually annotated 8 times for cluster ED2.
•Start number 14 was manually annotated 7 times for cluster ED2.

Info for manual annotations of cluster GB:
•Start number 13 was manually annotated 5 times for cluster GB.

Info for manual annotations of cluster JD:
•Start number 12 was manually annotated 2 times for cluster JD.

Gene Information:

Gene: ASegato_43 Start: 19037, Stop: 19561, Start Num: 13
Candidate Starts for ASegato_43:
(Start: 13 @19037 has 25 MA's), (Start: 14 @19046 has 10 MA's), (19, 19094), (28, 19211), (29, 19226), (44, 19370),

Gene: Alleb_40 Start: 20983, Stop: 21459, Start Num: 13
Candidate Starts for Alleb_40:
(Start: 11 @20959 has 1 MA's), (Start: 13 @20983 has 25 MA's), (Start: 14 @20992 has 10 MA's), (25, 21097), (26, 21106), (49, 21349),

Gene: Amavida_30 Start: 14813, Stop: 15217, Start Num: 12
Candidate Starts for Amavida_30:
(Start: 12 @14813 has 15 MA's), (23, 14930), (35, 15062), (38, 15083), (40, 15095), (43, 15116), (53, 15170), (55, 15176),

Gene: Amigo_27 Start: 14687, Stop: 15091, Start Num: 12
Candidate Starts for Amigo_27:
(Start: 12 @14687 has 15 MA's), (23, 14804), (35, 14936), (38, 14957), (40, 14969), (43, 14990), (53, 15044), (55, 15050),

Gene: Anansi_27 Start: 14696, Stop: 15100, Start Num: 12
Candidate Starts for Anansi_27:
(Start: 12 @14696 has 15 MA's), (23, 14813), (35, 14945), (38, 14966), (40, 14978), (43, 14999), (53, 15053), (55, 15059),

Gene: BarnCat_28 Start: 15320, Stop: 15790, Start Num: 13
Candidate Starts for BarnCat_28:
(1, 14870), (2, 14903), (3, 15197), (6, 15242), (Start: 13 @15320 has 25 MA's), (16, 15359), (19, 15377), (24, 15431), (33, 15560), (34, 15575), (36, 15596), (63, 15773),

Gene: Boersma_28 Start: 14687, Stop: 15091, Start Num: 12
Candidate Starts for Boersma_28:
(Start: 12 @14687 has 15 MA's), (23, 14804), (35, 14936), (38, 14957), (40, 14969), (43, 14990), (53, 15044), (55, 15050),

Gene: CMP1_16 Start: 13130, Stop: 13603, Start Num: 14
Candidate Starts for CMP1_16:
(Start: 14 @13130 has 10 MA's), (17, 13166), (20, 13187), (33, 13364), (59, 13532),

Gene: Casablancas_45 Start: 19121, Stop: 19645, Start Num: 13
Candidate Starts for Casablancas_45:
(10, 19094), (Start: 13 @19121 has 25 MA's), (Start: 14 @19130 has 10 MA's), (19, 19178), (28, 19295), (29, 19310), (39, 19415), (44, 19454),

Gene: Cassita_34 Start: 17696, Stop: 18166, Start Num: 13
Candidate Starts for Cassita_34:
(1, 17246), (2, 17279), (3, 17573), (6, 17618), (Start: 13 @17696 has 25 MA's), (16, 17735), (19, 17753), (24, 17807), (33, 17936), (34, 17951), (36, 17972), (63, 18149),

Gene: Commonplace_40 Start: 22597, Stop: 23088, Start Num: 12
Candidate Starts for Commonplace_40:
(Start: 12 @22597 has 15 MA's), (17, 22657), (32, 22867), (37, 22918), (41, 22942), (45, 22975), (51, 23008), (54, 23017), (57, 23026), (61, 23071),

Gene: DejaVu_40 Start: 18319, Stop: 18810, Start Num: 14
Candidate Starts for DejaVu_40:
(Start: 13 @18310 has 25 MA's), (Start: 14 @18319 has 10 MA's), (21, 18406), (44, 18643), (49, 18679), (52, 18688), (60, 18718),

Gene: Deschain_45 Start: 19794, Stop: 20309, Start Num: 14
Candidate Starts for Deschain_45:
(Start: 13 @19785 has 25 MA's), (Start: 14 @19794 has 10 MA's), (19, 19842), (28, 19959), (29, 19974), (44, 20118),

Gene: DustyDino_47 Start: 19985, Stop: 20500, Start Num: 14
Candidate Starts for DustyDino_47:
(Start: 13 @19976 has 25 MA's), (Start: 14 @19985 has 10 MA's), (19, 20033), (28, 20150), (29, 20165), (44, 20309),

Gene: EhyElimayoE_50 Start: 27577, Stop: 28065, Start Num: 9
Candidate Starts for EhyElimayoE_50:
(Start: 9 @27577 has 8 MA's), (Start: 11 @27586 has 1 MA's), (19, 27667), (21, 27700), (23, 27709), (42, 27907), (46, 27949), (48, 27952),

Gene: Erenyeager_44 Start: 19371, Stop: 19895, Start Num: 13
Candidate Starts for Erenyeager_44:
(Start: 13 @19371 has 25 MA's), (Start: 14 @19380 has 10 MA's), (19, 19428), (28, 19545), (29, 19560), (44, 19704),

Gene: Fork_40 Start: 18695, Stop: 19210, Start Num: 14
Candidate Starts for Fork_40:
(10, 18659), (Start: 13 @18686 has 25 MA's), (Start: 14 @18695 has 10 MA's), (19, 18743), (28, 18860), (29, 18875), (44, 19019),

Gene: Frankenweenie_57 Start: 30164, Stop: 30652, Start Num: 9
Candidate Starts for Frankenweenie_57:
(4, 30113), (5, 30119), (Start: 9 @30164 has 8 MA's), (Start: 13 @30197 has 25 MA's), (15, 30221), (18, 30245), (23, 30296), (46, 30536), (48, 30539), (50, 30545), (56, 30560), (61, 30611), (62, 30614),

Gene: Gorgeous_27 Start: 14696, Stop: 15100, Start Num: 12
Candidate Starts for Gorgeous_27:
(Start: 12 @14696 has 15 MA's), (23, 14813), (35, 14945), (38, 14966), (40, 14978), (43, 14999), (53, 15053), (55, 15059),

Gene: Heylee_30 Start: 14813, Stop: 15217, Start Num: 12
Candidate Starts for Heylee_30:
(Start: 12 @14813 has 15 MA's), (23, 14930), (35, 15062), (38, 15083), (40, 15095), (43, 15116), (53, 15170), (55, 15176),

Gene: HollowPurple_45 Start: 19236, Stop: 19763, Start Num: 13
Candidate Starts for HollowPurple_45:
(Start: 13 @19236 has 25 MA's), (Start: 14 @19245 has 10 MA's), (19, 19293), (30, 19437), (44, 19569), (55, 19623),

Gene: Hortus1_39 Start: 20973, Stop: 21449, Start Num: 13
Candidate Starts for Hortus1_39:

(Start: 11 @20949 has 1 MA's), (Start: 13 @20973 has 25 MA's), (Start: 14 @20982 has 10 MA's), (25, 21087), (26, 21096), (49, 21339),

Gene: Hubbs_39 Start: 18522, Stop: 19022, Start Num: 13
Candidate Starts for Hubbs_39:
(Start: 13 @18522 has 25 MA's), (Start: 14 @18531 has 10 MA's), (21, 18618), (44, 18855), (49, 18891), (52, 18900), (60, 18930),

Gene: Ichor_26 Start: 14687, Stop: 15091, Start Num: 12
Candidate Starts for Ichor_26:
(Start: 12 @14687 has 15 MA's), (23, 14804), (35, 14936), (38, 14957), (40, 14969), (43, 14990), (53, 15044), (55, 15050),

Gene: Issa7_43 Start: 18698, Stop: 19216, Start Num: 14
Candidate Starts for Issa7_43:
(Start: 13 @18689 has 25 MA's), (Start: 14 @18698 has 10 MA's), (19, 18746), (28, 18863), (30, 18890), (44, 19022), (55, 19076),

Gene: Jacko_41 Start: 19168, Stop: 19641, Start Num: 14
Candidate Starts for Jacko_41:
(Start: 13 @19159 has 25 MA's), (Start: 14 @19168 has 10 MA's), (36, 19432), (39, 19450),

Gene: Jaek_26 Start: 14687, Stop: 15091, Start Num: 12
Candidate Starts for Jaek_26:
(Start: 12 @14687 has 15 MA's), (23, 14804), (35, 14936), (38, 14957), (40, 14969), (43, 14990), (53, 15044), (55, 15050),

Gene: JustBecause_44 Start: 24800, Stop: 25288, Start Num: 9
Candidate Starts for JustBecause_44:
(8, 24797), (Start: 9 @24800 has 8 MA's), (Start: 13 @24833 has 25 MA's), (15, 24857), (18, 24881), (19, 24890), (23, 24932), (28, 24974), (46, 25172), (48, 25175),

Gene: Kela_45 Start: 24665, Stop: 25153, Start Num: 9
Candidate Starts for Kela_45:
(8, 24662), (Start: 9 @24665 has 8 MA's), (Start: 13 @24698 has 25 MA's), (15, 24722), (18, 24746), (19, 24755), (23, 24797), (28, 24839), (46, 25037), (48, 25040),

Gene: Kradal_50 Start: 27577, Stop: 28065, Start Num: 9
Candidate Starts for Kradal_50:
(Start: 9 @27577 has 8 MA's), (Start: 11 @27586 has 1 MA's), (19, 27667), (21, 27700), (23, 27709), (42, 27907), (46, 27949), (48, 27952),

Gene: LeeroyJenkins_34 Start: 17627, Stop: 18097, Start Num: 13
Candidate Starts for LeeroyJenkins_34:
(3, 17504), (6, 17549), (Start: 13 @17627 has 25 MA's), (16, 17666), (19, 17684), (24, 17738), (33, 17867), (34, 17882), (36, 17903), (63, 18080),

Gene: Lifes_30 Start: 15351, Stop: 15821, Start Num: 13
Candidate Starts for Lifes_30:
(1, 14901), (2, 14934), (3, 15228), (6, 15273), (Start: 13 @15351 has 25 MA's), (16, 15390), (19, 15408), (24, 15462), (33, 15591), (34, 15606), (36, 15627), (63, 15804),

Gene: Lupine_37 Start: 17723, Stop: 18223, Start Num: 13

Candidate Starts for Lupine_37:
(Start: 13 @17723 has 25 MA's), (Start: 14 @17732 has 10 MA's), (21, 17819), (44, 18056), (49, 18092), (52, 18101), (60, 18131),

Gene: Lyell_44 Start: 19299, Stop: 19814, Start Num: 14
Candidate Starts for Lyell_44:
(Start: 13 @19290 has 25 MA's), (Start: 14 @19299 has 10 MA's), (19, 19347), (28, 19464), (29, 19479), (39, 19584), (44, 19623),

Gene: Mistmere_37 Start: 17840, Stop: 18376, Start Num: 14
Candidate Starts for Mistmere_37:
(Start: 9 @17798 has 8 MA's), (10, 17804), (Start: 13 @17831 has 25 MA's), (Start: 14 @17840 has 10 MA's), (28, 18005), (30, 18029), (31, 18059), (55, 18215), (58, 18224), (64, 18341),

Gene: Molivia_31 Start: 14946, Stop: 15350, Start Num: 12
Candidate Starts for Molivia_31:
(Start: 12 @14946 has 15 MA's), (35, 15195), (38, 15216), (40, 15228), (43, 15249), (47, 15288), (58, 15318),

Gene: Musetta_44 Start: 19414, Stop: 19932, Start Num: 14
Candidate Starts for Musetta_44:
(Start: 13 @19405 has 25 MA's), (Start: 14 @19414 has 10 MA's), (19, 19462), (28, 19579), (30, 19606), (44, 19738), (55, 19792),

Gene: Necrophoxinus_46 Start: 19993, Stop: 20508, Start Num: 14
Candidate Starts for Necrophoxinus_46:
(Start: 13 @19984 has 25 MA's), (Start: 14 @19993 has 10 MA's), (19, 20041), (28, 20158), (29, 20173), (44, 20317),

Gene: Nirvana_54 Start: 29563, Stop: 30051, Start Num: 9
Candidate Starts for Nirvana_54:
(4, 29512), (Start: 9 @29563 has 8 MA's), (Start: 13 @29596 has 25 MA's), (15, 29620), (23, 29695), (46, 29935), (48, 29938), (50, 29944), (56, 29959),

Gene: Nonagon_39 Start: 22297, Stop: 22788, Start Num: 12
Candidate Starts for Nonagon_39:
(Start: 12 @22297 has 15 MA's), (17, 22357), (32, 22567), (37, 22618), (41, 22642), (45, 22675), (51, 22708), (57, 22726), (61, 22771),

Gene: OlinDD_39 Start: 20972, Stop: 21448, Start Num: 13
Candidate Starts for OlinDD_39:
(Start: 11 @20948 has 1 MA's), (Start: 13 @20972 has 25 MA's), (Start: 14 @20981 has 10 MA's), (25, 21086), (26, 21095), (49, 21338),

Gene: Pavlo_37 Start: 18001, Stop: 18501, Start Num: 13
Candidate Starts for Pavlo_37:
(Start: 13 @18001 has 25 MA's), (Start: 14 @18010 has 10 MA's), (21, 18097), (44, 18334), (49, 18370), (52, 18379), (60, 18409),

Gene: PhillyPhilly_38 Start: 17903, Stop: 18403, Start Num: 13
Candidate Starts for PhillyPhilly_38:
(Start: 13 @17903 has 25 MA's), (Start: 14 @17912 has 10 MA's), (44, 18236), (49, 18272), (52, 18281), (60, 18311),

Gene: Pioneer3_39 Start: 20980, Stop: 21456, Start Num: 13
Candidate Starts for Pioneer3_39:
(Start: 11 @20956 has 1 MA's), (Start: 13 @20980 has 25 MA's), (Start: 14 @20989 has 10 MA's), (25, 21094), (26, 21103), (49, 21346),

Gene: Platte_39 Start: 20765, Stop: 21241, Start Num: 13
Candidate Starts for Platte_39:
(Start: 11 @20741 has 1 MA's), (Start: 13 @20765 has 25 MA's), (Start: 14 @20774 has 10 MA's), (25, 20879), (26, 20888), (49, 21131),

Gene: Quantum_49 Start: 27577, Stop: 28065, Start Num: 9
Candidate Starts for Quantum_49:
(Start: 9 @27577 has 8 MA's), (Start: 11 @27586 has 1 MA's), (19, 27667), (21, 27700), (23, 27709), (42, 27907), (46, 27949), (48, 27952),

Gene: Rings_26 Start: 14818, Stop: 15222, Start Num: 12
Candidate Starts for Rings_26:
(Start: 12 @14818 has 15 MA's), (23, 14935), (35, 15067), (38, 15088), (40, 15100), (43, 15121), (53, 15175), (55, 15181),

Gene: Roman_39 Start: 18369, Stop: 18869, Start Num: 13
Candidate Starts for Roman_39:
(Start: 13 @18369 has 25 MA's), (Start: 14 @18378 has 10 MA's), (21, 18465), (44, 18702), (49, 18738), (52, 18747), (60, 18777),

Gene: RunningBrook_45 Start: 19976, Stop: 20500, Start Num: 13
Candidate Starts for RunningBrook_45:
(Start: 13 @19976 has 25 MA's), (Start: 14 @19985 has 10 MA's), (19, 20033), (28, 20150), (29, 20165), (44, 20309),

Gene: Saradis_39 Start: 17970, Stop: 18461, Start Num: 14
Candidate Starts for Saradis_39:
(Start: 13 @17961 has 25 MA's), (Start: 14 @17970 has 10 MA's), (21, 18057), (44, 18294), (49, 18330), (52, 18339), (60, 18369),

Gene: Sarkar_50 Start: 27577, Stop: 28065, Start Num: 9
Candidate Starts for Sarkar_50:
(Start: 9 @27577 has 8 MA's), (Start: 11 @27586 has 1 MA's), (19, 27667), (21, 27700), (23, 27709), (42, 27907), (46, 27949), (48, 27952),

Gene: Satis_50 Start: 27582, Stop: 28061, Start Num: 11
Candidate Starts for Satis_50:
(Start: 9 @27573 has 8 MA's), (Start: 11 @27582 has 1 MA's), (19, 27663), (21, 27696), (23, 27705), (42, 27903), (46, 27945), (48, 27948),

Gene: Shroomer_48 Start: 19516, Stop: 20040, Start Num: 13
Candidate Starts for Shroomer_48:
(Start: 13 @19516 has 25 MA's), (Start: 14 @19525 has 10 MA's), (19, 19573), (27, 19681), (28, 19690), (29, 19705), (44, 19849),

Gene: Solimine_39 Start: 18385, Stop: 18876, Start Num: 14
Candidate Starts for Solimine_39:

(Start: 13 @18376 has 25 MA's), (Start: 14 @18385 has 10 MA's), (21, 18472), (44, 18709), (49, 18745), (52, 18754), (60, 18784),

Gene: SorJuana_27 Start: 14696, Stop: 15100, Start Num: 12
Candidate Starts for SorJuana_27:
(Start: 12 @14696 has 15 MA's), (23, 14813), (35, 14945), (38, 14966), (40, 14978), (43, 14999), (53, 15053), (55, 15059),

Gene: SteakFry_46 Start: 19236, Stop: 19763, Start Num: 13
Candidate Starts for SteakFry_46:
(Start: 13 @19236 has 25 MA's), (Start: 14 @19245 has 10 MA's), (19, 19293), (30, 19437), (44, 19569), (55, 19623),

Gene: StevieWelch_44 Start: 19376, Stop: 19900, Start Num: 13
Candidate Starts for StevieWelch_44:
(Start: 13 @19376 has 25 MA's), (Start: 14 @19385 has 10 MA's), (19, 19433), (28, 19550), (29, 19565), (44, 19709),

Gene: Tandem_39 Start: 20919, Stop: 21395, Start Num: 13
Candidate Starts for Tandem_39:
(Start: 11 @20895 has 1 MA's), (Start: 13 @20919 has 25 MA's), (Start: 14 @20928 has 10 MA's), (25, 21033), (26, 21042), (49, 21285),

Gene: Thunderclap_27 Start: 14716, Stop: 15120, Start Num: 12
Candidate Starts for Thunderclap_27:
(Start: 12 @14716 has 15 MA's), (23, 14833), (35, 14965), (38, 14986), (40, 14998), (43, 15019), (53, 15073), (55, 15079),

Gene: Uterion_42 Start: 18471, Stop: 18971, Start Num: 13
Candidate Starts for Uterion_42:
(Start: 13 @18471 has 25 MA's), (Start: 14 @18480 has 10 MA's), (21, 18567), (44, 18804), (49, 18840), (52, 18849), (60, 18879),

Gene: WaterT_33 Start: 17440, Stop: 17910, Start Num: 13
Candidate Starts for WaterT_33:
(1, 16990), (2, 17023), (3, 17317), (6, 17362), (Start: 13 @17440 has 25 MA's), (16, 17479), (19, 17497), (33, 17680), (63, 17893),

Gene: Welcome_45 Start: 19402, Stop: 19917, Start Num: 14
Candidate Starts for Welcome_45:
(Start: 13 @19393 has 25 MA's), (Start: 14 @19402 has 10 MA's), (19, 19450), (28, 19567), (29, 19582), (44, 19726),

Gene: Wolfstar_39 Start: 18320, Stop: 18826, Start Num: 14
Candidate Starts for Wolfstar_39:
(7, 18245), (Start: 13 @18311 has 25 MA's), (Start: 14 @18320 has 10 MA's), (22, 18413), (49, 18680), (51, 18686), (52, 18689), (60, 18719),

Gene: Yeezus_26 Start: 14686, Stop: 15090, Start Num: 12
Candidate Starts for Yeezus_26:
(Start: 12 @14686 has 15 MA's), (23, 14803), (35, 14935), (38, 14956), (40, 14968), (43, 14989), (53, 15043), (55, 15049),

Gene: Yuma_43 Start: 19313, Stop: 19828, Start Num: 14
Candidate Starts for Yuma_43:
(10, 19277), (Start: 13 @19304 has 25 MA's), (Start: 14 @19313 has 10 MA's), (19, 19361), (28, 19478), (29, 19493), (39, 19598), (44, 19637),