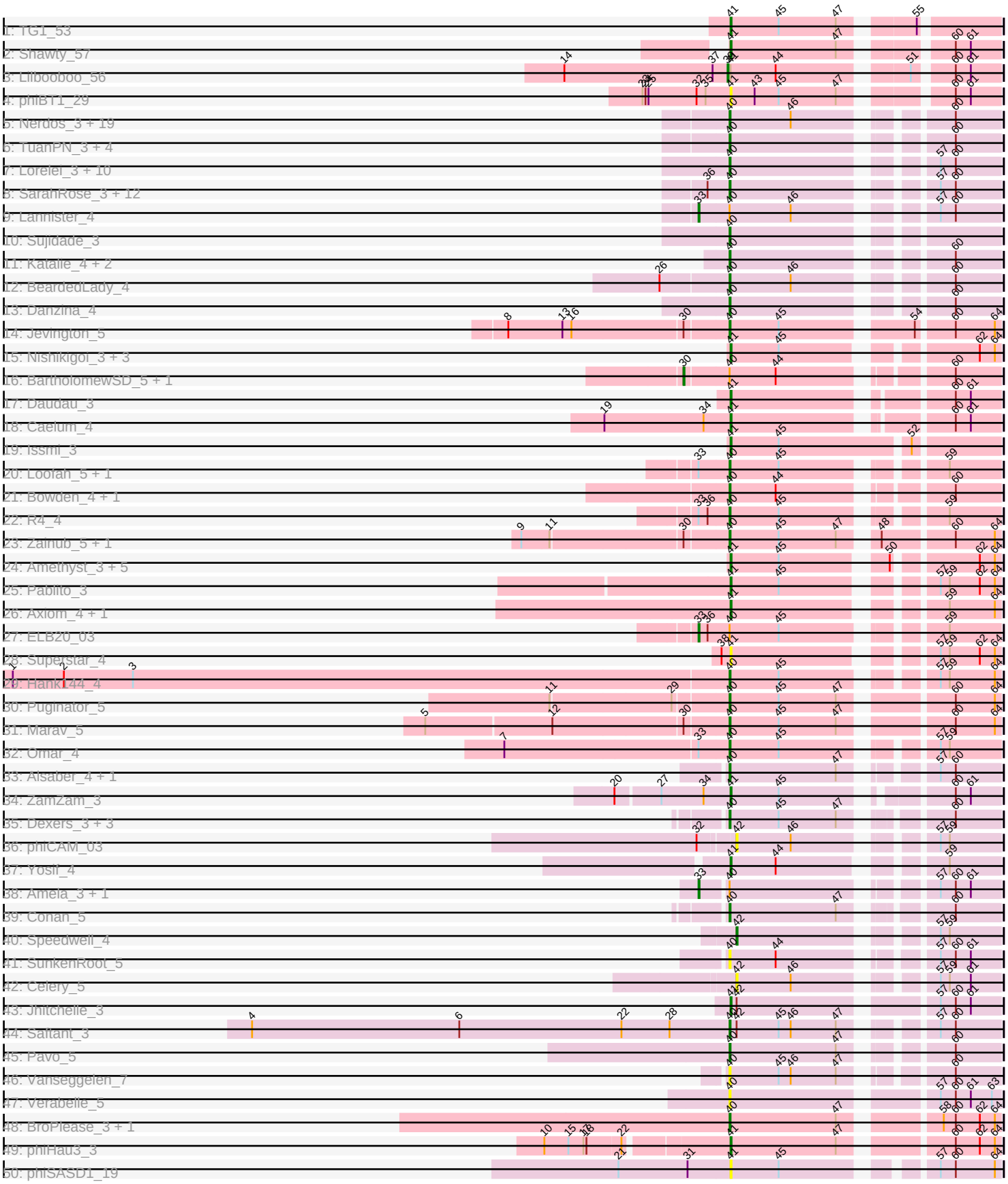
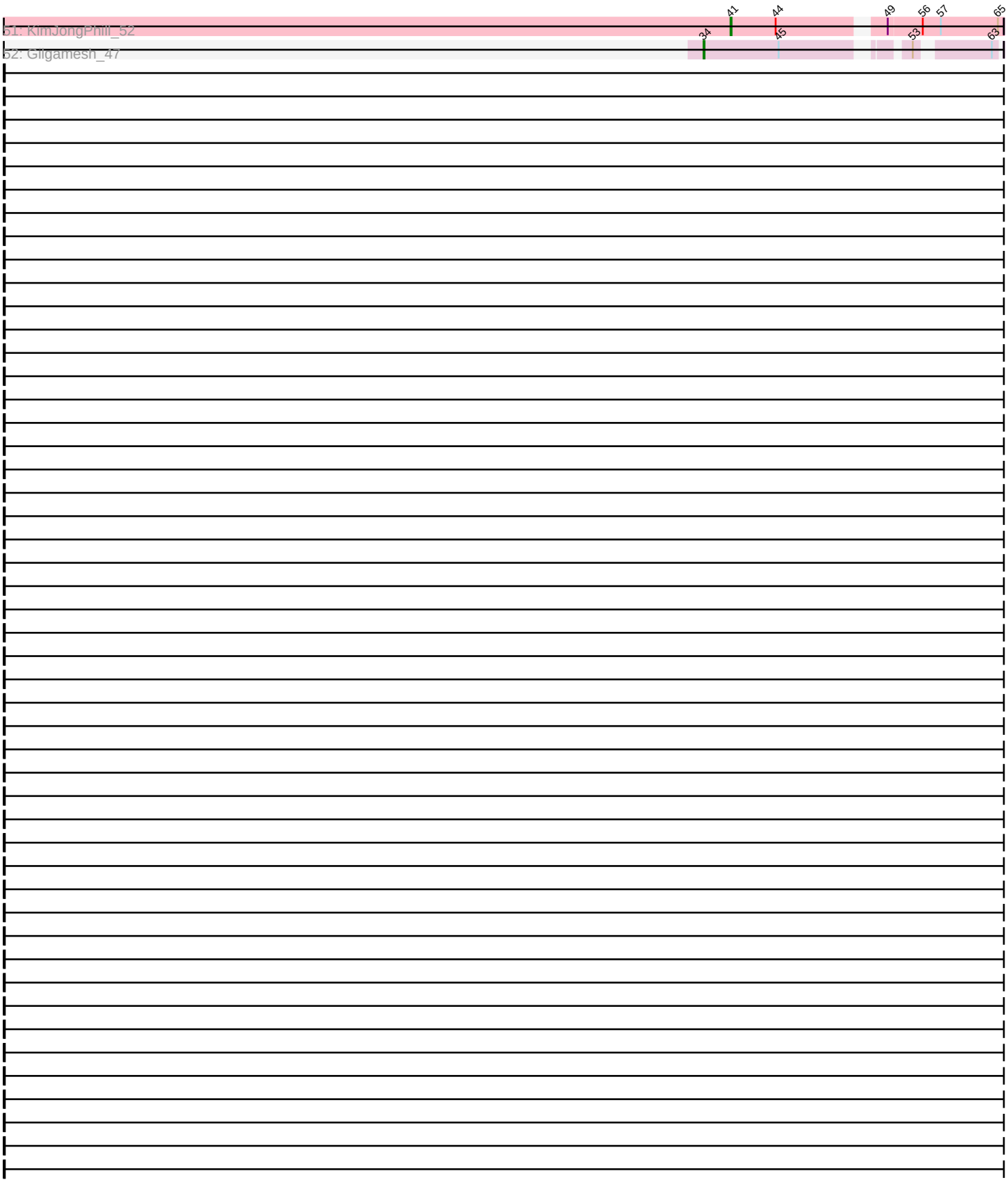
Pham 304831


1: TG1_53
2: Shawty_57
3: Lilbooboo_56
4: phiBT1_29
5: Nerdos_3 + 19
6: TuanPN_3 + 4
7: Lorelei_3 + 10
8: SarahRose_3 + 12
9: Lannister_4
10: Sujidade_3
11: Katalie_4 + 2
12: BeardedLady_4
13: Danzina_4
14: Jevington_5
15: Nishikigoi_3 + 3
16: BartholomewSD_5 + 1
17: Daudau_3
18: Caelum_4
19: Issmi_3
20: Loofah_5 + 1
21: Bowden_4 + 1
22: R4_4
23: Zainub_5 + 1
24: Amethyst_3 + 5
25: Pablito_3
26: Axiom_4 + 1
27: ELB20_03
28: Superstar_4
29: Hank144_4
30: Puginator_5
31: Marav_5
32: Omar_4
33: Alsaber_4 + 1
34: ZamZam_3
35: Dexers_3 + 3
36: phiCAM_03
37: Yoshi_4
38: Amela_3 + 1
39: Conan_5
40: Speedwell_4
41: SunkenRoot_5
42: Celery_5
43: Jnitchelle_3
44: Saltant_3
45: Pavo_5
46: Vanseggelen_7
47: Verabelle_5
48: BroPlease_3 + 1
49: phiHau3_3
50: phiSASD1_19

Pham 304831



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 304831 Report

This analysis was run 06/08/26 on database version 649.

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 304831 has 118 members, 9 are drafts.

Phages represented in each track:
• Track 1 : TG1_53
• Track 2 : Shawty_57
• Track 3 : Lilbooboo_56
• Track 4 : phiBT1_29
• Track 5 : Nerdos_3, SunsetPointe_3, Oliynyk_4, Leviticus_3, Bovely_3, Jash_4, BryanRecycles_4, Phettuccine_3, Aaronocolus_3, Legacy_3, Unstoppable_3, EnochSoames_4, Ozzie_3, Indigo_3, Hydra_5, Eddasa_4, Esperer_3, Caliburn_3, Izzy_4, Rusticus_4
• Track 6 : TuanPN_3, Yasdnil_3, Nanodon_5, Ejemplo_3, Maneekul_3
• Track 7 : Lorelei_3, Zemlya_4, Goby_3, Nabi_3, Godpower_4, Celeste_3, Dattran_4, Brataylor_4, Lika_3, Rana_3, Toma_3
• Track 8 : SarahRose_3, Chucky_3, Triste_3, OzzyJ_4, Snorlax_3, TagePhighter_4, Asten_3, Dwayne_3, Werner_3, BarryBee_5, Hippo_3, Emaanora_5, Whatever_3
• Track 9 : Lannister_4
• Track 10 : Sujidade_3
• Track 11 : Katalie_4, South40_4, RedBear_5
• Track 12 : BeardedLady_4
• Track 13 : Danzina_4
• Track 14 : Jevington_5
• Track 15 : Nishikigoi_3, Haizum_3, Tefunt_3, Andris_3
• Track 16 : BartholomewSD_5, Alvy_5
• Track 17 : Daudau_3
• Track 18 : Caelum_4
• Track 19 : Issmi_3
• Track 20 : Loofah_5, Paedore_4
• Track 21 : Bowden_4, Thestral_4
• Track 22 : R4_4
• Track 23 : Zainub_5, Paolo_5
• Track 24 : Amethyst_3, Diane_3, SqueakyClean_4, Animus_4, Janus_4, GirlDinner_3
• Track 25 : Pablito_3
• Track 26 : Axiom_4, Triumph_4
• Track 27 : ELB20_03

• Track 28 : Superstar_4
• Track 29 : Hank144_4
• Track 30 : Puginator_5
• Track 31 : Marav_5
• Track 32 : Omar_4
• Track 33 : Alsaber_4, Sudan_3
• Track 34 : ZamZam_3
• Track 35 : Dexers_3, Provolone_5, Kaine_4, ElGato_5
• Track 36 : phiCAM_03
• Track 37 : Yosif_4
• Track 38 : Amela_3, Verse_3
• Track 39 : Conan_5
• Track 40 : Speedwell_4
• Track 41 : SunkenRoot_5
• Track 42 : Celery_5
• Track 43 : Jhitchelle_3
• Track 44 : Saftant_3
• Track 45 : Pavo_5
• Track 46 : Vanseggelen_7
• Track 47 : Verabelle_5
• Track 48 : BroPlease_3, GreenWeasel_3
• Track 49 : phiHau3_3
• Track 50 : phiSASD1_19
• Track 51 : KimJongPhill_52
• Track 52 : Gilgamesh_47

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

The start number called the most often in the published annotations is 40, it was called in 77 of the 109 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aaronocolus_3, Alsaber_4, Asten_3, BarryBee_5, BeardedLady_4, Bovely_3, Bowden_4, Brataylor_4, BroPlease_3, BryanRecycles_4, Caliburn_3, Celeste_3, Chucky_3, Conan_5, Danzina_4, Dattran_4, Dexers_3, Dwayne_3, Eddasa_4, Ejemplo_3, ElGato_5, Emaanora_5, EnochSoames_4, Esperer_3, Goby_3, Godpower_4, GreenWeasel_3, Hank144_4, Hippo_3, Hydra_5, Indigo_3, Izzy_4, Jash_4, Jevington_5, Kaine_4, Katalie_4, Legacy_3, Leviticus_3, Lika_3, Loofah_5, Lorelei_3, Maneekul_3, Marav_5, Nabi_3, Nanodon_5, Nerdos_3, Oliynyk_4, Omar_4, Ozzie_3, OzzyJ_4, Paedore_4, Paolo_5, Pavo_5, Phettuccine_3, Provolone_5, Puginator_5, R4_4, Rana_3, RedBear_5, Rusticus_4, Saftant_3, SarahRose_3, Snorlax_3, South40_4, Sudan_3, Sujidade_3, SunkenRoot_5, SunsetPointe_3, TagePhighter_4, Thestral_4, Toma_3, Triste_3, TuanPN_3, Unstoppable_3, Vanseggelen_7, Verabelle_5, Werner_3, Whatever_3, Yasdnil_3, Zainub_5, Zemlya_4,

Genes that have the "Most Annotated" start but do not call it:
• Alvy_5, Amela_3, BartholomewSD_5, ELB20_03, Lannister_4, Verse_3,

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

• Amethyst_3, Andris_3, Animus_4, Axiom_4, Caelum_4, Celery_5, Daudau_3, Diane_3, Gilgamesh_47, GirlDinner_3, Haizum_3, Issmi_3, Janus_4, Jhitchelle_3, KimJongPhill_52, Lilbooboo_56, Nishikigoi_3, Pablito_3, Shawty_57, Speedwell_4, SqueakyClean_4, Superstar_4, TG1_53, Tefunt_3, Triumph_4, Yosif_4, ZamZam_3, phiBT1_29, phiCAM_03, phiHau3_3, phiSASD1_19,

Summary by start number:

Start 30:
• Found in 6 of 118 (5.1%) of genes in pham
• Manual Annotations of this start: 2 of 109
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Alvy_5 (BD2), BartholomewSD_5 (BD2),

Start 33:
• Found in 8 of 118 (6.8%) of genes in pham
• Manual Annotations of this start: 4 of 109
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Amela_3 (BD3), ELB20_03 (BD2), Lannister_4 (BD1), Verse_3 (BD3),

Start 34:
• Found in 3 of 118 (2.5%) of genes in pham
• Manual Annotations of this start: 1 of 109
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Gilgamesh_47 (singleton),

Start 39:
• Found in 1 of 118 (0.8%) of genes in pham
• Manual Annotations of this start: 1 of 109
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Lilbooboo_56 (BB1),

Start 40:
• Found in 87 of 118 (73.7%) of genes in pham
• Manual Annotations of this start: 77 of 109
• Called 93.1% of time when present
• Phage (with cluster) where this start called: Aaronocolus_3 (BD1), Alsaber_4 (BD3), Asten_3 (BD1), BarryBee_5 (BD1), BeardedLady_4 (BD1), Bovely_3 (BD1), Bowden_4 (BD2), Brataylor_4 (BD1), BroPlease_3 (BD4), BryanRecycles_4 (BD1), Caliburn_3 (BD1), Celeste_3 (BD1), Chucky_3 (BD1), Conan_5 (BD3), Danzina_4 (BD1), Dattran_4 (BD1), Dexers_3 (BD3), Dwayne_3 (BD1), Eddasa_4 (BD1), Ejemplo_3 (BD1), ElGato_5 (BD3), Emaanora_5 (BD1), EnochSoames_4 (BD1), Esperer_3 (BD1), Goby_3 (BD1), Godpower_4 (BD1), GreenWeasel_3 (BD4), Hank144_4 (BD2), Hippo_3 (BD1), Hydra_5 (BD1), Indigo_3 (BD1), Izzy_4 (BD1), Jash_4 (BD1), Jevington_5 (BD2), Kaine_4 (BD3), Katalie_4 (BD1), Legacy_3 (BD1), Leviticus_3 (BD1), Lika_3 (BD1), Loofah_5 (BD2), Lorelei_3 (BD1), Maneekul_3 (BD1), Marav_5 (BD2), Nabi_3 (BD1), Nanodon_5 (BD1), Nerdos_3 (BD1), Oliynyk_4 (BD1), Omar_4 (BD2), Ozzie_3 (BD1), OzzyJ_4 (BD1), Paedore_4 (BD2), Paolo_5 (BD2), Pavo_5 (BD3), Phettuccine_3 (BD1), Provolone_5 (BD3), Puginator_5 (BD2), R4_4 (BD2), Rana_3 (BD1), RedBear_5 (BD1), Rusticus_4 (BD1), Saftant_3 (BD3), SarahRose_3 (BD1), Snorlax_3 (BD1), South40_4 (BD1), Sudan_3 (BD3), Sujidade_3 (BD1), SunkenRoot_5 (BD3), SunsetPointe_3 (BD1), TagePhighter_4

(BD1), Thestral_4 (BD2), Toma_3 (BD1), Triste_3 (BD1), TuanPN_3 (BD1), Unstoppable_3 (BD1), Vanseggelen_7 (BD3), Verabelle_5 (BD3), Werner_3 (BD1), Whatever_3 (BD1), Yasdnil_3 (BD1), Zainub_5 (BD2), Zemlya_4 (BD1),

Start 41:
• Found in 27 of 118 (22.9%) of genes in pham
• Manual Annotations of this start: 23 of 109
• Called 96.3% of time when present
• Phage (with cluster) where this start called: Amethyst_3 (BD2), Andris_3 (BD2), Animus_4 (BD2), Axiom_4 (BD2), Caelum_4 (BD2), Daudau_3 (BD2), Diane_3 (BD2), GirlDinner_3 (BD2), Haizum_3 (BD2), Issmi_3 (BD2), Janus_4 (BD2), Jhitchelle_3 (BD3), KimJongPhill_52 (BR), Nishikigoi_3 (BD2), Pablito_3 (BD2), Shawty_57 (BB1), SqueakyClean_4 (BD2), Superstar_4 (BD2), TG1_53 (BB1), Tefunt_3 (BD2), Triumph_4 (BD2), Yosif_4 (BD3), ZamZam_3 (BD3), phiBT1_29 (BB1), phiHau3_3 (BD4), phiSASD1_19 (BJ),

Start 42:
• Found in 5 of 118 (4.2%) of genes in pham
• Manual Annotations of this start: 1 of 109
• Called 60.0% of time when present
• Phage (with cluster) where this start called: Celery_5 (BD3), Speedwell_4 (BD3), phiCAM_03 (BD3),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, BR, BJ, BD4, BD1, BD3, BD2, BB1,

Info for manual annotations of cluster BB1:
•Start number 39 was manually annotated 1 time for cluster BB1.
•Start number 41 was manually annotated 2 times for cluster BB1.

Info for manual annotations of cluster BD1:
•Start number 33 was manually annotated 1 time for cluster BD1.
•Start number 40 was manually annotated 54 times for cluster BD1.

Info for manual annotations of cluster BD2:
•Start number 30 was manually annotated 2 times for cluster BD2.
•Start number 33 was manually annotated 1 time for cluster BD2.
•Start number 40 was manually annotated 12 times for cluster BD2.
•Start number 41 was manually annotated 16 times for cluster BD2.

Info for manual annotations of cluster BD3:
•Start number 33 was manually annotated 2 times for cluster BD3.
•Start number 40 was manually annotated 9 times for cluster BD3.
•Start number 41 was manually annotated 3 times for cluster BD3.
•Start number 42 was manually annotated 1 time for cluster BD3.

Info for manual annotations of cluster BD4:
•Start number 40 was manually annotated 2 times for cluster BD4.
•Start number 41 was manually annotated 1 time for cluster BD4.

Info for manual annotations of cluster BR:
•Start number 41 was manually annotated 1 time for cluster BR.

Gene Information:

Gene: Aaronocolus_3 Start: 1457, Stop: 1687, Start Num: 40
Candidate Starts for Aaronocolus_3:
(Start: 40 @1457 has 77 MA's), (46, 1517), (60, 1643),

Gene: Alsaber_4 Start: 1528, Stop: 1758, Start Num: 40
Candidate Starts for Alsaber_4:
(Start: 40 @1528 has 77 MA's), (47, 1633), (57, 1699), (60, 1714),

Gene: Alvy_5 Start: 1351, Stop: 1626, Start Num: 30
Candidate Starts for Alvy_5:
(Start: 30 @1351 has 2 MA's), (Start: 40 @1393 has 77 MA's), (44, 1438), (60, 1582),

Gene: Amela_3 Start: 1492, Stop: 1746, Start Num: 33
Candidate Starts for Amela_3:
(Start: 33 @1492 has 4 MA's), (Start: 40 @1516 has 77 MA's), (57, 1687), (60, 1702), (61, 1717),

Gene: Amethyst_3 Start: 1195, Stop: 1425, Start Num: 41
Candidate Starts for Amethyst_3:
(Start: 41 @1195 has 23 MA's), (45, 1243), (50, 1333), (62, 1405), (64, 1420),

Gene: Andris_3 Start: 1226, Stop: 1456, Start Num: 41
Candidate Starts for Andris_3:
(Start: 41 @1226 has 23 MA's), (45, 1274), (62, 1436), (64, 1451),

Gene: Animus_4 Start: 1573, Stop: 1803, Start Num: 41
Candidate Starts for Animus_4:
(Start: 41 @1573 has 23 MA's), (45, 1621), (50, 1711), (62, 1783), (64, 1798),

Gene: Asten_3 Start: 1429, Stop: 1659, Start Num: 40
Candidate Starts for Asten_3:
(36, 1408), (Start: 40 @1429 has 77 MA's), (57, 1600), (60, 1615),

Gene: Axiom_4 Start: 1225, Stop: 1455, Start Num: 41
Candidate Starts for Axiom_4:
(Start: 41 @1225 has 23 MA's), (59, 1405), (64, 1450),

Gene: BarryBee_5 Start: 1429, Stop: 1659, Start Num: 40
Candidate Starts for BarryBee_5:
(36, 1408), (Start: 40 @1429 has 77 MA's), (57, 1600), (60, 1615),

Gene: BartholomewSD_5 Start: 1351, Stop: 1626, Start Num: 30
Candidate Starts for BartholomewSD_5:
(Start: 30 @1351 has 2 MA's), (Start: 40 @1393 has 77 MA's), (44, 1438), (60, 1582),

Gene: BeardedLady_4 Start: 1704, Stop: 1934, Start Num: 40
Candidate Starts for BeardedLady_4:

(26, 1638), (Start: 40 @1704 has 77 MA's), (46, 1764), (60, 1890),

Gene: Bovely_3 Start: 1463, Stop: 1693, Start Num: 40
Candidate Starts for Bovely_3:
(Start: 40 @1463 has 77 MA's), (46, 1523), (60, 1649),

Gene: Bowden_4 Start: 1295, Stop: 1528, Start Num: 40
Candidate Starts for Bowden_4:
(Start: 40 @1295 has 77 MA's), (44, 1340), (60, 1484),

Gene: Brataylor_4 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Brataylor_4:
(Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: BroPlease_3 Start: 1345, Stop: 1587, Start Num: 40
Candidate Starts for BroPlease_3:
(Start: 40 @1345 has 77 MA's), (47, 1450), (58, 1531), (60, 1543), (62, 1567), (64, 1582),

Gene: BryanRecycles_4 Start: 1618, Stop: 1848, Start Num: 40
Candidate Starts for BryanRecycles_4:
(Start: 40 @1618 has 77 MA's), (46, 1678), (60, 1804),

Gene: Caelum_4 Start: 1143, Stop: 1376, Start Num: 41
Candidate Starts for Caelum_4:
(19, 1017), (Start: 34 @1116 has 1 MA's), (Start: 41 @1143 has 23 MA's), (60, 1332), (61, 1347),

Gene: Caliburn_3 Start: 1437, Stop: 1667, Start Num: 40
Candidate Starts for Caliburn_3:
(Start: 40 @1437 has 77 MA's), (46, 1497), (60, 1623),

Gene: Celery_5 Start: 1435, Stop: 1659, Start Num: 42
Candidate Starts for Celery_5:
(Start: 42 @1435 has 1 MA's), (46, 1489), (57, 1600), (59, 1609), (61, 1630),

Gene: Celeste_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Celeste_3:
(Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: Chucky_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Chucky_3:
(36, 1409), (Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: Conan_5 Start: 1533, Stop: 1763, Start Num: 40
Candidate Starts for Conan_5:
(Start: 40 @1533 has 77 MA's), (47, 1638), (60, 1719),

Gene: Danzina_4 Start: 1629, Stop: 1859, Start Num: 40
Candidate Starts for Danzina_4:
(Start: 40 @1629 has 77 MA's), (60, 1815),

Gene: Dattran_4 Start: 1428, Stop: 1658, Start Num: 40
Candidate Starts for Dattran_4:
(Start: 40 @1428 has 77 MA's), (57, 1599), (60, 1614),

Gene: Daudau_3 Start: 1197, Stop: 1433, Start Num: 41
Candidate Starts for Daudau_3:
(Start: 41 @1197 has 23 MA's), (60, 1389), (61, 1404),

Gene: Dexers_3 Start: 1526, Stop: 1756, Start Num: 40
Candidate Starts for Dexers_3:
(Start: 40 @1526 has 77 MA's), (45, 1574), (47, 1631), (60, 1712),

Gene: Diane_3 Start: 1197, Stop: 1427, Start Num: 41
Candidate Starts for Diane_3:
(Start: 41 @1197 has 23 MA's), (45, 1245), (50, 1335), (62, 1407), (64, 1422),

Gene: Dwayne_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Dwayne_3:
(36, 1409), (Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: ELB20_03 Start: 1370, Stop: 1630, Start Num: 33
Candidate Starts for ELB20_03:
(Start: 33 @1370 has 4 MA's), (36, 1379), (Start: 40 @1400 has 77 MA's), (45, 1448), (59, 1580),

Gene: Eddasa_4 Start: 1618, Stop: 1848, Start Num: 40
Candidate Starts for Eddasa_4:
(Start: 40 @1618 has 77 MA's), (46, 1678), (60, 1804),

Gene: Ejemplo_3 Start: 1431, Stop: 1661, Start Num: 40
Candidate Starts for Ejemplo_3:
(Start: 40 @1431 has 77 MA's), (60, 1617),

Gene: ElGato_5 Start: 1536, Stop: 1766, Start Num: 40
Candidate Starts for ElGato_5:
(Start: 40 @1536 has 77 MA's), (45, 1584), (47, 1641), (60, 1722),

Gene: Emaanora_5 Start: 1429, Stop: 1659, Start Num: 40
Candidate Starts for Emaanora_5:
(36, 1408), (Start: 40 @1429 has 77 MA's), (57, 1600), (60, 1615),

Gene: EnochSoames_4 Start: 1614, Stop: 1844, Start Num: 40
Candidate Starts for EnochSoames_4:
(Start: 40 @1614 has 77 MA's), (46, 1674), (60, 1800),

Gene: Esperer_3 Start: 1457, Stop: 1687, Start Num: 40
Candidate Starts for Esperer_3:
(Start: 40 @1457 has 77 MA's), (46, 1517), (60, 1643),

Gene: Gilgamesh_47 Start: 31594, Stop: 31839, Start Num: 34
Candidate Starts for Gilgamesh_47:
(Start: 34 @31594 has 1 MA's), (45, 31669), (53, 31771), (63, 31834),

Gene: GirlDinner_3 Start: 1236, Stop: 1466, Start Num: 41
Candidate Starts for GirlDinner_3:
(Start: 41 @1236 has 23 MA's), (45, 1284), (50, 1374), (62, 1446), (64, 1461),

Gene: Goby_3 Start: 1428, Stop: 1658, Start Num: 40
Candidate Starts for Goby_3:
(Start: 40 @1428 has 77 MA's), (57, 1599), (60, 1614),

Gene: Godpower_4 Start: 1431, Stop: 1661, Start Num: 40
Candidate Starts for Godpower_4:
(Start: 40 @1431 has 77 MA's), (57, 1602), (60, 1617),

Gene: GreenWeasel_3 Start: 1345, Stop: 1587, Start Num: 40
Candidate Starts for GreenWeasel_3:
(Start: 40 @1345 has 77 MA's), (47, 1450), (58, 1531), (60, 1543), (62, 1567), (64, 1582),

Gene: Haizum_3 Start: 1226, Stop: 1456, Start Num: 41
Candidate Starts for Haizum_3:
(Start: 41 @1226 has 23 MA's), (45, 1274), (62, 1436), (64, 1451),

Gene: Hank144_4 Start: 1519, Stop: 1749, Start Num: 40
Candidate Starts for Hank144_4:
(1, 808), (2, 859), (3, 928), (Start: 40 @1519 has 77 MA's), (45, 1567), (57, 1690), (59, 1699), (64, 1744),

Gene: Hippo_3 Start: 1429, Stop: 1659, Start Num: 40
Candidate Starts for Hippo_3:
(36, 1408), (Start: 40 @1429 has 77 MA's), (57, 1600), (60, 1615),

Gene: Hydra_5 Start: 1994, Stop: 2224, Start Num: 40
Candidate Starts for Hydra_5:
(Start: 40 @1994 has 77 MA's), (46, 2054), (60, 2180),

Gene: Indigo_3 Start: 1457, Stop: 1687, Start Num: 40
Candidate Starts for Indigo_3:
(Start: 40 @1457 has 77 MA's), (46, 1517), (60, 1643),

Gene: Issmi_3 Start: 1100, Stop: 1351, Start Num: 41
Candidate Starts for Issmi_3:
(Start: 41 @1100 has 23 MA's), (45, 1148), (52, 1271),

Gene: Izzy_4 Start: 1665, Stop: 1895, Start Num: 40
Candidate Starts for Izzy_4:
(Start: 40 @1665 has 77 MA's), (46, 1725), (60, 1851),

Gene: Janus_4 Start: 1573, Stop: 1803, Start Num: 41
Candidate Starts for Janus_4:
(Start: 41 @1573 has 23 MA's), (45, 1621), (50, 1711), (62, 1783), (64, 1798),

Gene: Jash_4 Start: 1618, Stop: 1848, Start Num: 40
Candidate Starts for Jash_4:
(Start: 40 @1618 has 77 MA's), (46, 1678), (60, 1804),

Gene: Jevington_5 Start: 1780, Stop: 2022, Start Num: 40
Candidate Starts for Jevington_5:
(8, 1567), (13, 1621), (16, 1630), (Start: 30 @1738 has 2 MA's), (Start: 40 @1780 has 77 MA's), (45, 1828), (54, 1945), (60, 1978), (64, 2017),

Gene: Jhitchelle_3 Start: 1439, Stop: 1681, Start Num: 41
Candidate Starts for Jhitchelle_3:
(Start: 41 @1439 has 23 MA's), (Start: 42 @1445 has 1 MA's), (57, 1622), (60, 1637), (61, 1652),

Gene: Kaine_4 Start: 1526, Stop: 1756, Start Num: 40
Candidate Starts for Kaine_4:
(Start: 40 @1526 has 77 MA's), (45, 1574), (47, 1631), (60, 1712),

Gene: Katalie_4 Start: 1699, Stop: 1929, Start Num: 40
Candidate Starts for Katalie_4:
(Start: 40 @1699 has 77 MA's), (60, 1885),

Gene: KimJongPhill_52 Start: 40917, Stop: 40666, Start Num: 41
Candidate Starts for KimJongPhill_52:
(Start: 41 @40917 has 23 MA's), (44, 40872), (49, 40779), (56, 40746), (57, 40728), (65, 40671),

Gene: Lannister_4 Start: 1409, Stop: 1669, Start Num: 33
Candidate Starts for Lannister_4:
(Start: 33 @1409 has 4 MA's), (Start: 40 @1439 has 77 MA's), (46, 1499), (57, 1610), (60, 1625),

Gene: Legacy_3 Start: 1437, Stop: 1667, Start Num: 40
Candidate Starts for Legacy_3:
(Start: 40 @1437 has 77 MA's), (46, 1497), (60, 1623),

Gene: Leviticus_3 Start: 1457, Stop: 1687, Start Num: 40
Candidate Starts for Leviticus_3:
(Start: 40 @1457 has 77 MA's), (46, 1517), (60, 1643),

Gene: Lika_3 Start: 1432, Stop: 1662, Start Num: 40
Candidate Starts for Lika_3:
(Start: 40 @1432 has 77 MA's), (57, 1603), (60, 1618),

Gene: Lilbooboo_56 Start: 40542, Stop: 40781, Start Num: 39
Candidate Starts for Lilbooboo_56:
(14, 40380), (37, 40527), (Start: 39 @40542 has 1 MA's), (Start: 41 @40545 has 23 MA's), (44, 40590), (51, 40704), (60, 40737), (61, 40752),

Gene: Loofah_5 Start: 1456, Stop: 1686, Start Num: 40
Candidate Starts for Loofah_5:
(Start: 33 @1426 has 4 MA's), (Start: 40 @1456 has 77 MA's), (45, 1504), (59, 1636),

Gene: Lorelei_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Lorelei_3:
(Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: Maneekul_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Maneekul_3:
(Start: 40 @1430 has 77 MA's), (60, 1616),

Gene: Marav_5 Start: 1778, Stop: 2020, Start Num: 40
Candidate Starts for Marav_5:

(5, 1487), (12, 1610), (Start: 30 @1736 has 2 MA's), (Start: 40 @1778 has 77 MA's), (45, 1826), (47, 1883), (60, 1976), (64, 2015),

Gene: Nabi_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Nabi_3:
(Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: Nanodon_5 Start: 1629, Stop: 1859, Start Num: 40
Candidate Starts for Nanodon_5:
(Start: 40 @1629 has 77 MA's), (60, 1815),

Gene: Nerdos_3 Start: 1457, Stop: 1687, Start Num: 40
Candidate Starts for Nerdos_3:
(Start: 40 @1457 has 77 MA's), (46, 1517), (60, 1643),

Gene: Nishikigoi_3 Start: 1226, Stop: 1456, Start Num: 41
Candidate Starts for Nishikigoi_3:
(Start: 41 @1226 has 23 MA's), (45, 1274), (62, 1436), (64, 1451),

Gene: Oliynyk_4 Start: 1618, Stop: 1848, Start Num: 40
Candidate Starts for Oliynyk_4:
(Start: 40 @1618 has 77 MA's), (46, 1678), (60, 1804),

Gene: Omar_4 Start: 1453, Stop: 1683, Start Num: 40
Candidate Starts for Omar_4:
(7, 1234), (Start: 33 @1423 has 4 MA's), (Start: 40 @1453 has 77 MA's), (45, 1501), (57, 1624), (59, 1633),

Gene: Ozzie_3 Start: 1437, Stop: 1667, Start Num: 40
Candidate Starts for Ozzie_3:
(Start: 40 @1437 has 77 MA's), (46, 1497), (60, 1623),

Gene: OzzyJ_4 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for OzzyJ_4:
(36, 1409), (Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: Pablito_3 Start: 1262, Stop: 1492, Start Num: 41
Candidate Starts for Pablito_3:
(Start: 41 @1262 has 23 MA's), (45, 1310), (57, 1433), (59, 1442), (62, 1472), (64, 1487),

Gene: Paedore_4 Start: 1456, Stop: 1686, Start Num: 40
Candidate Starts for Paedore_4:
(Start: 33 @1426 has 4 MA's), (Start: 40 @1456 has 77 MA's), (45, 1504), (59, 1636),

Gene: Paolo_5 Start: 1834, Stop: 2076, Start Num: 40
Candidate Starts for Paolo_5:
(9, 1639), (11, 1666), (Start: 30 @1792 has 2 MA's), (Start: 40 @1834 has 77 MA's), (45, 1882), (47, 1939), (48, 1966), (60, 2032), (64, 2071),

Gene: Pavo_5 Start: 1806, Stop: 2036, Start Num: 40
Candidate Starts for Pavo_5:
(Start: 40 @1806 has 77 MA's), (47, 1911), (60, 1992),

Gene: Phettuccine_3 Start: 1457, Stop: 1687, Start Num: 40
Candidate Starts for Phettuccine_3:
(Start: 40 @1457 has 77 MA's), (46, 1517), (60, 1643),

Gene: Provolone_5 Start: 1536, Stop: 1766, Start Num: 40
Candidate Starts for Provolone_5:
(Start: 40 @1536 has 77 MA's), (45, 1584), (47, 1641), (60, 1722),

Gene: Puginator_5 Start: 1780, Stop: 2022, Start Num: 40
Candidate Starts for Puginator_5:
(11, 1612), (29, 1729), (Start: 40 @1780 has 77 MA's), (45, 1828), (47, 1885), (60, 1978), (64, 2017),

Gene: R4_4 Start: 1411, Stop: 1641, Start Num: 40
Candidate Starts for R4_4:
(Start: 33 @1381 has 4 MA's), (36, 1390), (Start: 40 @1411 has 77 MA's), (45, 1459), (59, 1591),

Gene: Rana_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Rana_3:
(Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: RedBear_5 Start: 1699, Stop: 1929, Start Num: 40
Candidate Starts for RedBear_5:
(Start: 40 @1699 has 77 MA's), (60, 1885),

Gene: Rusticus_4 Start: 1618, Stop: 1848, Start Num: 40
Candidate Starts for Rusticus_4:
(Start: 40 @1618 has 77 MA's), (46, 1678), (60, 1804),

Gene: Saftant_3 Start: 1474, Stop: 1704, Start Num: 40
Candidate Starts for Saftant_3:
(4, 997), (6, 1204), (22, 1366), (28, 1414), (Start: 40 @1474 has 77 MA's), (Start: 42 @1480 has 1 MA's), (45, 1522), (46, 1534), (47, 1579), (57, 1645), (60, 1660),

Gene: SarahRose_3 Start: 1429, Stop: 1659, Start Num: 40
Candidate Starts for SarahRose_3:
(36, 1408), (Start: 40 @1429 has 77 MA's), (57, 1600), (60, 1615),

Gene: Shawty_57 Start: 40001, Stop: 40237, Start Num: 41
Candidate Starts for Shawty_57:
(Start: 41 @40001 has 23 MA's), (47, 40106), (60, 40193), (61, 40208),

Gene: Snorlax_3 Start: 1429, Stop: 1659, Start Num: 40
Candidate Starts for Snorlax_3:
(36, 1408), (Start: 40 @1429 has 77 MA's), (57, 1600), (60, 1615),

Gene: South40_4 Start: 1699, Stop: 1929, Start Num: 40
Candidate Starts for South40_4:
(Start: 40 @1699 has 77 MA's), (60, 1885),

Gene: Speedwell_4 Start: 1418, Stop: 1642, Start Num: 42
Candidate Starts for Speedwell_4:
(Start: 42 @1418 has 1 MA's), (57, 1583), (59, 1592),

Gene: SqueakyClean_4 Start: 1499, Stop: 1729, Start Num: 41
Candidate Starts for SqueakyClean_4:
(Start: 41 @1499 has 23 MA's), (45, 1547), (50, 1637), (62, 1709), (64, 1724),

Gene: Sudan_3 Start: 1530, Stop: 1760, Start Num: 40
Candidate Starts for Sudan_3:
(Start: 40 @1530 has 77 MA's), (47, 1635), (57, 1701), (60, 1716),

Gene: Sujidade_3 Start: 1428, Stop: 1658, Start Num: 40
Candidate Starts for Sujidade_3:
(Start: 40 @1428 has 77 MA's),

Gene: SunkenRoot_5 Start: 1509, Stop: 1739, Start Num: 40
Candidate Starts for SunkenRoot_5:
(Start: 40 @1509 has 77 MA's), (44, 1554), (57, 1680), (60, 1695), (61, 1710),

Gene: SunsetPointe_3 Start: 1456, Stop: 1686, Start Num: 40
Candidate Starts for SunsetPointe_3:
(Start: 40 @1456 has 77 MA's), (46, 1516), (60, 1642),

Gene: Superstar_4 Start: 1632, Stop: 1862, Start Num: 41
Candidate Starts for Superstar_4:
(38, 1623), (Start: 41 @1632 has 23 MA's), (57, 1803), (59, 1812), (62, 1842), (64, 1857),

Gene: TG1_53 Start: 39763, Stop: 39999, Start Num: 41
Candidate Starts for TG1_53:
(Start: 41 @39763 has 23 MA's), (45, 39811), (47, 39868), (55, 39928),

Gene: TagePhighter_4 Start: 1429, Stop: 1659, Start Num: 40
Candidate Starts for TagePhighter_4:
(36, 1408), (Start: 40 @1429 has 77 MA's), (57, 1600), (60, 1615),

Gene: Tefunt_3 Start: 1226, Stop: 1456, Start Num: 41
Candidate Starts for Tefunt_3:
(Start: 41 @1226 has 23 MA's), (45, 1274), (62, 1436), (64, 1451),

Gene: Thestral_4 Start: 1295, Stop: 1528, Start Num: 40
Candidate Starts for Thestral_4:
(Start: 40 @1295 has 77 MA's), (44, 1340), (60, 1484),

Gene: Toma_3 Start: 1428, Stop: 1658, Start Num: 40
Candidate Starts for Toma_3:
(Start: 40 @1428 has 77 MA's), (57, 1599), (60, 1614),

Gene: Triste_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Triste_3:
(36, 1409), (Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: Triumph_4 Start: 1225, Stop: 1455, Start Num: 41
Candidate Starts for Triumph_4:
(Start: 41 @1225 has 23 MA's), (59, 1405), (64, 1450),

Gene: TuanPN_3 Start: 1431, Stop: 1661, Start Num: 40

Candidate Starts for TuanPN_3:
(Start: 40 @1431 has 77 MA's), (60, 1617),

Gene: Unstoppable_3 Start: 1457, Stop: 1687, Start Num: 40
Candidate Starts for Unstoppable_3:
(Start: 40 @1457 has 77 MA's), (46, 1517), (60, 1643),

Gene: Vanseggelen_7 Start: 1429, Stop: 1659, Start Num: 40
Candidate Starts for Vanseggelen_7:
(Start: 40 @1429 has 77 MA's), (45, 1477), (46, 1489), (47, 1534), (60, 1615),

Gene: Verabelle_5 Start: 1784, Stop: 2026, Start Num: 40
Candidate Starts for Verabelle_5:
(Start: 40 @1784 has 77 MA's), (57, 1967), (60, 1982), (61, 1997), (63, 2018),

Gene: Verse_3 Start: 1486, Stop: 1740, Start Num: 33
Candidate Starts for Verse_3:
(Start: 33 @1486 has 4 MA's), (Start: 40 @1510 has 77 MA's), (57, 1681), (60, 1696), (61, 1711),

Gene: Werner_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Werner_3:
(36, 1409), (Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: Whatever_3 Start: 1430, Stop: 1660, Start Num: 40
Candidate Starts for Whatever_3:
(36, 1409), (Start: 40 @1430 has 77 MA's), (57, 1601), (60, 1616),

Gene: Yasdnil_3 Start: 1427, Stop: 1657, Start Num: 40
Candidate Starts for Yasdnil_3:
(Start: 40 @1427 has 77 MA's), (60, 1613),

Gene: Yosif_4 Start: 1421, Stop: 1651, Start Num: 41
Candidate Starts for Yosif_4:
(Start: 41 @1421 has 23 MA's), (44, 1466), (59, 1601),

Gene: Zainub_5 Start: 1780, Stop: 2022, Start Num: 40
Candidate Starts for Zainub_5:
(9, 1585), (11, 1612), (Start: 30 @1738 has 2 MA's), (Start: 40 @1780 has 77 MA's), (45, 1828), (47, 1885), (48, 1912), (60, 1978), (64, 2017),

Gene: ZamZam_3 Start: 1443, Stop: 1673, Start Num: 41
Candidate Starts for ZamZam_3:
(20, 1332), (27, 1374), (Start: 34 @1416 has 1 MA's), (Start: 41 @1443 has 23 MA's), (45, 1491), (60, 1629), (61, 1644),

Gene: Zemlya_4 Start: 1428, Stop: 1658, Start Num: 40
Candidate Starts for Zemlya_4:
(Start: 40 @1428 has 77 MA's), (57, 1599), (60, 1614),

Gene: phiBT1_29 Start: 41116, Stop: 41352, Start Num: 41
Candidate Starts for phiBT1_29:
(23, 41029), (24, 41032), (25, 41035), (32, 41083), (35, 41092), (Start: 41 @41116 has 23 MA's), (43, 41140), (45, 41164), (47, 41221), (60, 41308), (61, 41323),

Gene: phiCAM_03 Start: 1464, Stop: 1688, Start Num: 42
Candidate Starts for phiCAM_03:
(32, 1431), (Start: 42 @1464 has 1 MA's), (46, 1518), (57, 1629), (59, 1638),

Gene: phiHau3_3 Start: 1271, Stop: 1513, Start Num: 41
Candidate Starts for phiHau3_3:
(10, 1100), (15, 1124), (17, 1139), (18, 1142), (22, 1175), (Start: 41 @1271 has 23 MA's), (47, 1376), (60, 1469), (62, 1493), (64, 1508),

Gene: phiSASD1_19 Start: 36222, Stop: 36452, Start Num: 41
Candidate Starts for phiSASD1_19:
(21, 36111), (31, 36180), (Start: 41 @36222 has 23 MA's), (45, 36270), (57, 36393), (60, 36408), (64, 36447),