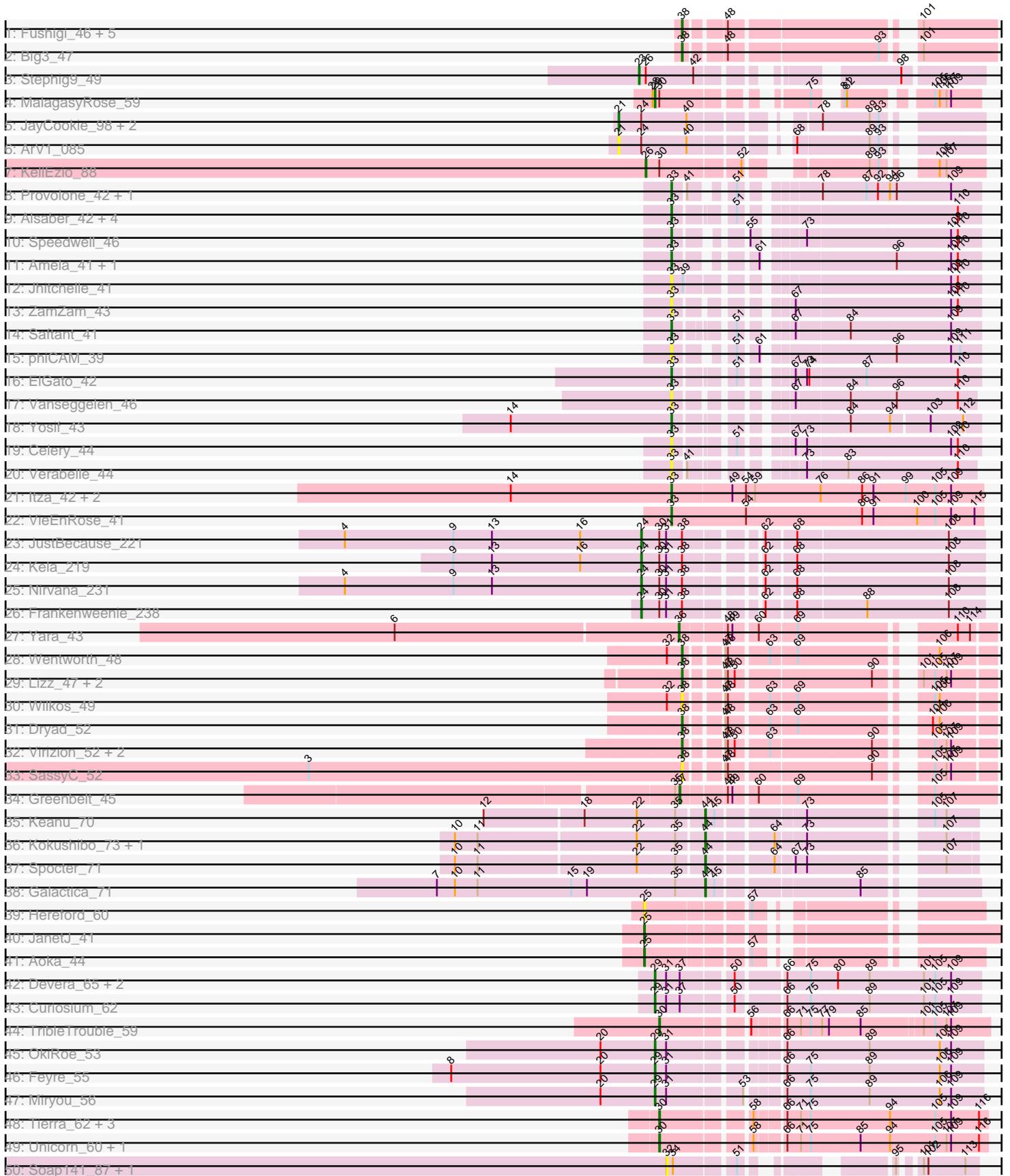# Pham 283690

# Pham 283690

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 283690 Report

This analysis was run 02/23/26 on database version 636.

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 283690 has 91 members, 24 are drafts.

Phages represented in each track:
• Track 1 : Fushigi_46, Traft412_50, Dexes_48, Pelly_47, Michley_47, MrGordo_47
• Track 2 : Big3_47
• Track 3 : Stephig9_49
• Track 4 : MalagasyRose_59
• Track 5 : JayCookie_98, MoyaNatalis_97, Conboy_96
• Track 6 : ArV1_085
• Track 7 : KellEzio_88
• Track 8 : Provolone_42, Pavo_42
• Track 9 : Alsaber_42, Sudan_42, Dexers_40, Kaine_41, Conan_42
• Track 10 : Speedwell_46
• Track 11 : Amela_41, Verse_41
• Track 12 : Jhitchelle_41
• Track 13 : ZamZam_43
• Track 14 : Saftant_41
• Track 15 : phiCAM_39
• Track 16 : ElGato_42
• Track 17 : Vanseggelen_46
• Track 18 : Yosif_43
• Track 19 : Celery_44
• Track 20 : Verabelle_44
• Track 21 : Itza_42, Celia_42, Urza_42
• Track 22 : VieEnRose_41
• Track 23 : JustBecause_221
• Track 24 : Kela_219
• Track 25 : Nirvana_231
• Track 26 : Frankenweenie_238
• Track 27 : Yara_43
• Track 28 : Wentworth_48
• Track 29 : Lizz_47, ShakeNBake_47, PHTowN_47
• Track 30 : Wilkos_49
• Track 31 : Dryad_52
• Track 32 : Virizion_52, Gibson_47, Rooney_47
• Track 33 : SassyC_52

- Track 34 : Greenbelt_45
- Track 35 : Keanu_70
- Track 36 : Kokushibo_73, Hiyaa_72
- Track 37 : Spocter_71
- Track 38 : Galactica_71
- Track 39 : Hereford_60
- Track 40 : JanetJ_41
- Track 41 : Aoka_44
- Track 42 : Devera_65, Dole_63, Illumine_63
- Track 43 : Curiosium_62
- Track 44 : TribleTrouble_59
- Track 45 : OkiRoe_53
- Track 46 : Feyre_55
- Track 47 : Miryou_56
- Track 48 : Tierra_62, Cain_62, Phrank_62, Bryler_62
- Track 49 : Unicorn_60, PhelpsODU_60
- Track 50 : Soap141_87, Sarshaun_88
- Track 51 : Loadrie_86, OverPar_89, Zakai_88, Wigglewiggle_87, MkaliMitinis3_89
- Track 52 : BrainDrainer_88, FarmResident_88, Sheng711_88, PYPDinur_87
- Track 53 : Douzhi_87
- Track 54 : ChutneyChips_87
- Track 55 : Stellammi_124
- Track 56 : Samy_41
- Track 57 : Elener_63

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

The start number called the most often in the published annotations is 33, it was called in 16 of the 67 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Alsaber_42, Amela_41, Celery_44, Celia_42, Conan_42, Dexers_40, ElGato_42, Itza_42, Jhitchelle_41, Kaine_41, Pavo_42, Provolone_42, Saftant_41, Speedwell_46, Sudan_42, Urza_42, Vanseggelen_46, Verabelle_44, Verse_41, VieEnRose_41, Yosif_43, ZamZam_43, phiCAM_39,

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

Genes that do not have the "Most Annotated" start:
- Aoka_44, ArV1_085, Big3_47, BrainDrainer_88, Bryler_62, Cain_62, ChutneyChips_87, Conboy_96, Curiosium_62, Devera_65, Dexes_48, Dole_63, Douzhi_87, Dryad_52, Elener_63, FarmResident_88, Feyre_55, Frankenweenie_238, Fushigi_46, Galactica_71, Gibson_47, Greenbelt_45, Hereford_60, Hiyaa_72, Illumine_63, JanetJ_41, JayCookie_98, JustBecause_221, Keanu_70, Kela_219, KellEzio_88, Kokushibo_73, Lizz_47, Loadrie_86, MalagasyRose_59, Michley_47, Miryou_56, MkaliMitinis3_89, MoyaNatalis_97, MrGordo_47, Nirvana_231, OkiRoe_53, OverPar_89, PHTowN_47, PYPDinur_87, Pelly_47, PhelpsODU_60, Phrank_62, Rooney_47, Samy_41, Sarshaun_88, SassyC_52, ShakeNBake_47, Sheng711_88, Soap141_87, Spocter_71, Stellammi_124, Stephig9_49, Tierra_62,

Traft412_50, TribleTrouble_59, Unicorn_60, Virizion_52, Wentworth_48, Wigglewiggle_87, Wilkos_49, Yara_43, Zakai_88,

**Summary by start number:**

Start 21:
• Found in 4 of 91 ( 4.4% ) of genes in pham
• Manual Annotations of this start: 2 of 67
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ArV1_085 (AR), Conboy_96 (AR), JayCookie_98 (AR), MoyaNatalis_97 (AR),

Start 23:
• Found in 1 of 91 ( 1.1% ) of genes in pham
• Manual Annotations of this start: 1 of 67
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Stephig9_49 (A8),

Start 24:
• Found in 9 of 91 ( 9.9% ) of genes in pham
• Manual Annotations of this start: 5 of 67
• Called 55.6% of time when present
• Phage (with cluster) where this start called: Elener_63 (singleton), Frankenweenie_238 (BM), JustBecause_221 (BM), Kela_219 (BM), Nirvana_231 (BM),

Start 25:
• Found in 3 of 91 ( 3.3% ) of genes in pham
• Manual Annotations of this start: 2 of 67
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aoka_44 (FO), Hereford_60 (FO), JanetJ_41 (FO),

Start 26:
• Found in 2 of 91 ( 2.2% ) of genes in pham
• Manual Annotations of this start: 1 of 67
• Called 50.0% of time when present
• Phage (with cluster) where this start called: KellEzio_88 (AT),

Start 29:
• Found in 9 of 91 ( 9.9% ) of genes in pham
• Manual Annotations of this start: 8 of 67
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Curiosium_62 (K1), Devera_65 (K1), Dole_63 (K1), Feyre_55 (K5), Illumine_63 (K1), MalagasyRose_59 (AG), Miryou_56 (K5), OkiRoe_53 (K5), Stellammi_124 (UNK),

Start 30:
• Found in 13 of 91 ( 14.3% ) of genes in pham
• Manual Annotations of this start: 7 of 67
• Called 53.8% of time when present
• Phage (with cluster) where this start called: Bryler_62 (K6), Cain_62 (K6), PhelpsODU_60 (K6), Phrank_62 (K6), Tierra_62 (K6), TribleTrouble_59 (K3),

Unicorn_60 (K6),

Start 32:
• Found in 14 of 91 ( 15.4% ) of genes in pham
• Manual Annotations of this start: 4 of 67
• Called 85.7% of time when present
• Phage (with cluster) where this start called: BrainDrainer_88 (L4), Douzhi_87 (L4), FarmResident_88 (L4), Loadrie_86 (L2), MkaliMitinis3_89 (L2), OverPar_89 (L2), PYPDinur_87 (L4), Sarshaun_88 (L2), Sheng711_88 (L4), Soap141_87 (L2), Wigglewiggle_87 (L2), Zakai_88 (L2),

Start 33:
• Found in 23 of 91 ( 25.3% ) of genes in pham
• Manual Annotations of this start: 16 of 67
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alsaber_42 (BD3), Amela_41 (BD3), Celery_44 (BD3), Celia_42 (BD6), Conan_42 (BD3), Dexers_40 (BD3), ElGato_42 (BD3), Itza_42 (BD6), Jhitchelle_41 (BD3), Kaine_41 (BD3), Pavo_42 (BD3), Provolone_42 (BD3), Saftant_41 (BD3), Speedwell_46 (BD3), Sudan_42 (BD3), Urza_42 (BD6), Vanseggelen_46 (BD3), Verabelle_44 (BD3), Verse_41 (BD3), VieEnRose_41 (BD6), Yosif_43 (BD3), ZamZam_43 (BD3), phiCAM_39 (BD3),

Start 34:
• Found in 14 of 91 ( 15.4% ) of genes in pham
• No Manual Annotations of this start.
• Called 7.1% of time when present
• Phage (with cluster) where this start called: ChutneyChips_87 (L4),

Start 36:
• Found in 1 of 91 ( 1.1% ) of genes in pham
• Manual Annotations of this start: 1 of 67
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Yara_43 (BN),

Start 37:
• Found in 5 of 91 ( 5.5% ) of genes in pham
• Manual Annotations of this start: 1 of 67
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Greenbelt_45 (BN),

Start 38:
• Found in 21 of 91 ( 23.1% ) of genes in pham
• Manual Annotations of this start: 14 of 67
• Called 81.0% of time when present
• Phage (with cluster) where this start called: Big3_47 (A1), Dexes_48 (A1), Dryad_52 (BN), Fushigi_46 (A1), Gibson_47 (BN), Lizz_47 (BN), Michley_47 (A1), MrGordo_47 (A1), PHTowN_47 (BN), Pelly_47 (A1), Rooney_47 (BN), SassyC_52 (BN), ShakeNBake_47 (BN), Traft412_50 (A1), Virizion_52 (BN), Wentworth_48 (BN), Wilkos_49 (BN),

Start 43:
• Found in 1 of 91 ( 1.1% ) of genes in pham
• Manual Annotations of this start: 1 of 67

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Samy_41 (singleton),

Start 44:
• Found in 6 of 91 ( 6.6% ) of genes in pham
• Manual Annotations of this start: 4 of 67
• Called 83.3% of time when present
• Phage (with cluster) where this start called: Galactica_71 (BQ), Hiyaa_72 (BQ), Keanu_70 (BQ), Kokushibo_73 (BQ), Spocter_71 (BQ),

**Summary by clusters:**

There are 19 clusters represented in this pham: K3, singleton, UNK, K5, AG, BM, BN, K1, A1, L4, BD6, L2, K6, BD3, A8, AT, FO, AR, BQ,

Info for manual annotations of cluster A1:
•Start number 38 was manually annotated 7 times for cluster A1.

Info for manual annotations of cluster A8:
•Start number 23 was manually annotated 1 time for cluster A8.

Info for manual annotations of cluster AG:
•Start number 29 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster AR:
•Start number 21 was manually annotated 2 times for cluster AR.

Info for manual annotations of cluster AT:
•Start number 26 was manually annotated 1 time for cluster AT.

Info for manual annotations of cluster BD3:
•Start number 33 was manually annotated 12 times for cluster BD3.

Info for manual annotations of cluster BD6:
•Start number 33 was manually annotated 4 times for cluster BD6.

Info for manual annotations of cluster BM:
•Start number 24 was manually annotated 4 times for cluster BM.

Info for manual annotations of cluster BN:
•Start number 36 was manually annotated 1 time for cluster BN.
•Start number 37 was manually annotated 1 time for cluster BN.
•Start number 38 was manually annotated 7 times for cluster BN.

Info for manual annotations of cluster BQ:
•Start number 44 was manually annotated 4 times for cluster BQ.

Info for manual annotations of cluster FO:
•Start number 25 was manually annotated 2 times for cluster FO.

Info for manual annotations of cluster K1:
•Start number 29 was manually annotated 4 times for cluster K1.

Info for manual annotations of cluster K3:
•Start number 30 was manually annotated 1 time for cluster K3.

Info for manual annotations of cluster K5:
•Start number 29 was manually annotated 3 times for cluster K5.

Info for manual annotations of cluster K6:
•Start number 30 was manually annotated 6 times for cluster K6.

Info for manual annotations of cluster L2:
•Start number 32 was manually annotated 4 times for cluster L2.

### *Gene Information:*

Gene: Alsaber_42 Start: 30369, Stop: 30716, Start Num: 33
Candidate Starts for Alsaber_42:
(Start: 33 @30369 has 16 MA's), (51, 30432), (110, 30687),

Gene: Amela_41 Start: 31176, Stop: 31517, Start Num: 33
Candidate Starts for Amela_41:
(Start: 33 @31176 has 16 MA's), (61, 31251), (96, 31407), (109, 31479), (110, 31488),

Gene: Aoka_44 Start: 31288, Stop: 31638, Start Num: 25
Candidate Starts for Aoka_44:
(Start: 25 @31288 has 2 MA's), (57, 31408),

Gene: ArV1_085 Start: 61509, Stop: 61898, Start Num: 21
Candidate Starts for ArV1_085:
(Start: 21 @61509 has 2 MA's), (Start: 24 @61539 has 5 MA's), (40, 61599), (68, 61695), (89, 61785), (93, 61797),

Gene: Big3_47 Start: 35903, Stop: 35556, Start Num: 38
Candidate Starts for Big3_47:
(Start: 38 @35903 has 14 MA's), (48, 35861), (93, 35675), (101, 35651),

Gene: BrainDrainer_88 Start: 55558, Stop: 55860, Start Num: 32
Candidate Starts for BrainDrainer_88:
(Start: 32 @55558 has 4 MA's), (34, 55564), (101, 55789),

Gene: Bryler_62 Start: 40362, Stop: 40757, Start Num: 30
Candidate Starts for Bryler_62:
(Start: 30 @40362 has 7 MA's), (58, 40464), (66, 40497), (71, 40515), (75, 40527), (94, 40629), (105, 40689), (109, 40710), (116, 40746),

Gene: Cain_62 Start: 40350, Stop: 40745, Start Num: 30
Candidate Starts for Cain_62:
(Start: 30 @40350 has 7 MA's), (58, 40452), (66, 40485), (71, 40503), (75, 40515), (94, 40617), (105, 40677), (109, 40698), (116, 40734),

Gene: Celery_44 Start: 30302, Stop: 30649, Start Num: 33
Candidate Starts for Celery_44:
(Start: 33 @30302 has 16 MA's), (51, 30365), (67, 30413), (73, 30425), (109, 30611), (110, 30620),

Gene: Celia_42 Start: 29394, Stop: 29801, Start Num: 33
Candidate Starts for Celia_42:
(14, 29181), (Start: 33 @29394 has 16 MA's), (49, 29472), (54, 29490), (59, 29502), (76, 29589), (86, 29643), (91, 29658), (99, 29700), (105, 29739), (109, 29760),

Gene: ChutneyChips_87 Start: 55447, Stop: 55743, Start Num: 34
Candidate Starts for ChutneyChips_87:
(28, 55420), (34, 55447), (42, 55474), (72, 55567), (101, 55672), (110, 55717),

Gene: Conan_42 Start: 30263, Stop: 30610, Start Num: 33
Candidate Starts for Conan_42:
(Start: 33 @30263 has 16 MA's), (51, 30326), (110, 30581),

Gene: Conboy_96 Start: 62664, Stop: 63050, Start Num: 21
Candidate Starts for Conboy_96:
(Start: 21 @62664 has 2 MA's), (Start: 24 @62694 has 5 MA's), (40, 62754), (78, 62877), (89, 62937), (93, 62949),

Gene: Curiosium_62 Start: 40040, Stop: 40438, Start Num: 29
Candidate Starts for Curiosium_62:
(Start: 29 @40040 has 8 MA's), (31, 40055), (Start: 37 @40073 has 1 MA's), (50, 40133), (66, 40187), (75, 40217), (89, 40292), (101, 40364), (105, 40379), (109, 40400),

Gene: Devera_65 Start: 41933, Stop: 42331, Start Num: 29
Candidate Starts for Devera_65:
(Start: 29 @41933 has 8 MA's), (31, 41948), (Start: 37 @41966 has 1 MA's), (50, 42026), (66, 42080), (75, 42110), (80, 42143), (89, 42185), (101, 42257), (105, 42272), (109, 42293),

Gene: Dexers_40 Start: 30287, Stop: 30634, Start Num: 33
Candidate Starts for Dexers_40:
(Start: 33 @30287 has 16 MA's), (51, 30350), (110, 30605),

Gene: Dexes_48 Start: 36500, Stop: 36153, Start Num: 38
Candidate Starts for Dexes_48:
(Start: 38 @36500 has 14 MA's), (48, 36458), (101, 36248),

Gene: Dole_63 Start: 41936, Stop: 42334, Start Num: 29
Candidate Starts for Dole_63:
(Start: 29 @41936 has 8 MA's), (31, 41951), (Start: 37 @41969 has 1 MA's), (50, 42029), (66, 42083), (75, 42113), (80, 42146), (89, 42188), (101, 42260), (105, 42275), (109, 42296),

Gene: Douzhi_87 Start: 55217, Stop: 55519, Start Num: 32
Candidate Starts for Douzhi_87:
(Start: 32 @55217 has 4 MA's), (34, 55223),

Gene: Dryad_52 Start: 35720, Stop: 35379, Start Num: 38
Candidate Starts for Dryad_52:
(Start: 38 @35720 has 14 MA's), (47, 35681), (48, 35678), (63, 35630), (69, 35597), (104, 35456), (106, 35447),

Gene: ElGato_42 Start: 29927, Stop: 30274, Start Num: 33
Candidate Starts for ElGato_42:
(Start: 33 @29927 has 16 MA's), (51, 29990), (67, 30038), (73, 30050), (74, 30053), (87, 30125), (110, 30245),

Gene: Elener_63 Start: 36486, Stop: 36878, Start Num: 24
Candidate Starts for Elener_63:
(1, 35673), (2, 36012), (5, 36153), (17, 36408), (Start: 24 @36486 has 5 MA's), (27, 36498), (65, 36648), (89, 36762), (105, 36813),

Gene: FarmResident_88 Start: 54956, Stop: 55258, Start Num: 32
Candidate Starts for FarmResident_88:
(Start: 32 @54956 has 4 MA's), (34, 54962), (101, 55187),

Gene: Feyre_55 Start: 41389, Stop: 41784, Start Num: 29
Candidate Starts for Feyre_55:
(8, 41119), (20, 41317), (Start: 29 @41389 has 8 MA's), (31, 41404), (66, 41530), (75, 41560), (89, 41635), (106, 41728), (109, 41743),

Gene: Frankenweenie_238 Start: 141929, Stop: 142342, Start Num: 24
Candidate Starts for Frankenweenie_238:
(Start: 24 @141929 has 5 MA's), (Start: 30 @141953 has 7 MA's), (31, 141962), (Start: 38 @141983 has 14 MA's), (62, 142064), (68, 142100), (88, 142187), (108, 142295),

Gene: Fushigi_46 Start: 33901, Stop: 33554, Start Num: 38
Candidate Starts for Fushigi_46:
(Start: 38 @33901 has 14 MA's), (48, 33859), (101, 33649),

Gene: Galactica_71 Start: 52489, Stop: 52794, Start Num: 44
Candidate Starts for Galactica_71:
(7, 52147), (10, 52171), (11, 52201), (15, 52321), (19, 52342), (35, 52453), (Start: 44 @52489 has 4 MA's), (45, 52501), (85, 52672),

Gene: Gibson_47 Start: 34722, Stop: 34381, Start Num: 38
Candidate Starts for Gibson_47:
(Start: 38 @34722 has 14 MA's), (47, 34683), (48, 34680), (50, 34671), (63, 34632), (90, 34503), (105, 34455), (107, 34440), (109, 34434),

Gene: Greenbelt_45 Start: 31434, Stop: 31075, Start Num: 37
Candidate Starts for Greenbelt_45:
(35, 31440), (Start: 37 @31434 has 1 MA's), (48, 31380), (49, 31374), (60, 31347), (69, 31299), (105, 31155),

Gene: Hereford_60 Start: 30404, Stop: 30754, Start Num: 25
Candidate Starts for Hereford_60:
(Start: 25 @30404 has 2 MA's), (57, 30524),

Gene: Hiyaa_72 Start: 53798, Stop: 54097, Start Num: 44
Candidate Starts for Hiyaa_72:
(10, 53492), (11, 53522), (22, 53720), (35, 53768), (Start: 44 @53798 has 4 MA's), (64, 53876), (73, 53912), (107, 54059),

Gene: Illumine_63 Start: 41935, Stop: 42333, Start Num: 29
Candidate Starts for Illumine_63:
(Start: 29 @41935 has 8 MA's), (31, 41950), (Start: 37 @41968 has 1 MA's), (50, 42028), (66, 42082), (75, 42112), (80, 42145), (89, 42187), (101, 42259), (105, 42274), (109, 42295),

Gene: Itza_42 Start: 29308, Stop: 29715, Start Num: 33
Candidate Starts for Itza_42:
(14, 29095), (Start: 33 @29308 has 16 MA's), (49, 29386), (54, 29404), (59, 29416), (76, 29503), (86, 29557), (91, 29572), (99, 29614), (105, 29653), (109, 29674),

Gene: JanetJ_41 Start: 31595, Stop: 31966, Start Num: 25
Candidate Starts for JanetJ_41:
(Start: 25 @31595 has 2 MA's),

Gene: JayCookie_98 Start: 63408, Stop: 63794, Start Num: 21
Candidate Starts for JayCookie_98:
(Start: 21 @63408 has 2 MA's), (Start: 24 @63438 has 5 MA's), (40, 63498), (78, 63621), (89, 63681), (93, 63693),

Gene: Jhitchelle_41 Start: 29800, Stop: 30153, Start Num: 33
Candidate Starts for Jhitchelle_41:
(Start: 33 @29800 has 16 MA's), (39, 29815), (109, 30115), (110, 30124),

Gene: JustBecause_221 Start: 129596, Stop: 130009, Start Num: 24
Candidate Starts for JustBecause_221:
(4, 129203), (9, 129347), (13, 129398), (16, 129515), (Start: 24 @129596 has 5 MA's), (Start: 30 @129620 has 7 MA's), (31, 129629), (Start: 38 @129650 has 14 MA's), (62, 129731), (68, 129767), (108, 129962),

Gene: Kaine_41 Start: 30078, Stop: 30425, Start Num: 33
Candidate Starts for Kaine_41:
(Start: 33 @30078 has 16 MA's), (51, 30141), (110, 30396),

Gene: Keanu_70 Start: 53661, Stop: 53963, Start Num: 44
Candidate Starts for Keanu_70:
(12, 53391), (18, 53517), (22, 53583), (35, 53631), (Start: 44 @53661 has 4 MA's), (45, 53673), (73, 53775), (105, 53907), (107, 53922),

Gene: Kela_219 Start: 129441, Stop: 129854, Start Num: 24
Candidate Starts for Kela_219:
(9, 129192), (13, 129243), (16, 129360), (Start: 24 @129441 has 5 MA's), (Start: 30 @129465 has 7 MA's), (31, 129474), (Start: 38 @129495 has 14 MA's), (62, 129576), (68, 129612), (108, 129807),

Gene: KellEzio_88 Start: 52796, Stop: 53146, Start Num: 26
Candidate Starts for KellEzio_88:
(Start: 26 @52796 has 1 MA's), (Start: 30 @52814 has 7 MA's), (52, 52913), (89, 53030), (93, 53042), (106, 53087), (107, 53096),

Gene: Kokushibo_73 Start: 53830, Stop: 54129, Start Num: 44
Candidate Starts for Kokushibo_73:
(10, 53524), (11, 53554), (22, 53752), (35, 53800), (Start: 44 @53830 has 4 MA's), (64, 53908), (73, 53944), (107, 54091),

Gene: Lizz_47 Start: 34536, Stop: 34195, Start Num: 38
Candidate Starts for Lizz_47:
(Start: 38 @34536 has 14 MA's), (47, 34497), (48, 34494), (50, 34485), (90, 34317), (101, 34284), (105, 34269), (107, 34254), (109, 34248),

Gene: Loadrie_86 Start: 56068, Stop: 56370, Start Num: 32
Candidate Starts for Loadrie_86:
(Start: 32 @56068 has 4 MA's), (34, 56074), (56, 56155), (81, 56221), (113, 56353),

Gene: MalagasyRose_59 Start: 39738, Stop: 40061, Start Num: 29
Candidate Starts for MalagasyRose_59:
(28, 39735), (Start: 29 @39738 has 8 MA's), (Start: 30 @39744 has 7 MA's), (75, 39891), (81, 39909), (82, 39912), (105, 40002), (106, 40008), (107, 40017), (109, 40023),

Gene: Michley_47 Start: 35355, Stop: 35008, Start Num: 38
Candidate Starts for Michley_47:
(Start: 38 @35355 has 14 MA's), (48, 35313), (101, 35103),

Gene: Miryou_56 Start: 42105, Stop: 42500, Start Num: 29
Candidate Starts for Miryou_56:
(20, 42033), (Start: 29 @42105 has 8 MA's), (31, 42120), (53, 42207), (66, 42246), (75, 42276), (89, 42351), (106, 42444), (109, 42459),

Gene: MkaliMitinis3_89 Start: 56052, Stop: 56354, Start Num: 32
Candidate Starts for MkaliMitinis3_89:
(Start: 32 @56052 has 4 MA's), (34, 56058), (56, 56139), (81, 56205), (113, 56337),

Gene: MoyaNatalis_97 Start: 62854, Stop: 63240, Start Num: 21
Candidate Starts for MoyaNatalis_97:
(Start: 21 @62854 has 2 MA's), (Start: 24 @62884 has 5 MA's), (40, 62944), (78, 63067), (89, 63127), (93, 63139),

Gene: MrGordo_47 Start: 35149, Stop: 34802, Start Num: 38
Candidate Starts for MrGordo_47:
(Start: 38 @35149 has 14 MA's), (48, 35107), (101, 34897),

Gene: Nirvana_231 Start: 140165, Stop: 140578, Start Num: 24
Candidate Starts for Nirvana_231:
(4, 139772), (9, 139916), (13, 139967), (Start: 24 @140165 has 5 MA's), (Start: 30 @140189 has 7 MA's), (31, 140198), (Start: 38 @140219 has 14 MA's), (62, 140300), (68, 140336), (108, 140531),

Gene: OkiRoe_53 Start: 39776, Stop: 40171, Start Num: 29
Candidate Starts for OkiRoe_53:
(20, 39704), (Start: 29 @39776 has 8 MA's), (31, 39791), (66, 39917), (89, 40022), (106, 40115), (109, 40130),

Gene: OverPar_89 Start: 56068, Stop: 56370, Start Num: 32
Candidate Starts for OverPar_89:
(Start: 32 @56068 has 4 MA's), (34, 56074), (56, 56155), (81, 56221), (113, 56353),

Gene: PHTowN_47 Start: 34534, Stop: 34193, Start Num: 38
Candidate Starts for PHTowN_47:

(Start: 38 @34534 has 14 MA's), (47, 34495), (48, 34492), (50, 34483), (90, 34315), (101, 34282), (105, 34267), (107, 34252), (109, 34246),

Gene: PYPDinur_87 Start: 55810, Stop: 56112, Start Num: 32
Candidate Starts for PYPDinur_87:
(Start: 32 @55810 has 4 MA's), (34, 55816), (101, 56041),

Gene: Pavo_42 Start: 30536, Stop: 30874, Start Num: 33
Candidate Starts for Pavo_42:
(Start: 33 @30536 has 16 MA's), (41, 30551), (51, 30590), (78, 30668), (87, 30725), (92, 30740), (94, 30755), (96, 30764), (109, 30836),

Gene: Pelly_47 Start: 35989, Stop: 35642, Start Num: 38
Candidate Starts for Pelly_47:
(Start: 38 @35989 has 14 MA's), (48, 35947), (101, 35737),

Gene: PhelpsODU_60 Start: 40279, Stop: 40674, Start Num: 30
Candidate Starts for PhelpsODU_60:
(Start: 30 @40279 has 7 MA's), (58, 40381), (66, 40414), (71, 40432), (75, 40444), (85, 40507), (94, 40546), (105, 40606), (107, 40621), (109, 40627), (116, 40663),

Gene: Phrank_62 Start: 40340, Stop: 40735, Start Num: 30
Candidate Starts for Phrank_62:
(Start: 30 @40340 has 7 MA's), (58, 40442), (66, 40475), (71, 40493), (75, 40505), (94, 40607), (105, 40667), (109, 40688), (116, 40724),

Gene: Provolone_42 Start: 29918, Stop: 30256, Start Num: 33
Candidate Starts for Provolone_42:
(Start: 33 @29918 has 16 MA's), (41, 29933), (51, 29972), (78, 30050), (87, 30107), (92, 30122), (94, 30137), (96, 30146), (109, 30218),

Gene: Rooney_47 Start: 34719, Stop: 34378, Start Num: 38
Candidate Starts for Rooney_47:
(Start: 38 @34719 has 14 MA's), (47, 34680), (48, 34677), (50, 34668), (63, 34629), (90, 34500), (105, 34452), (107, 34437), (109, 34431),

Gene: Saftant_41 Start: 30490, Stop: 30834, Start Num: 33
Candidate Starts for Saftant_41:
(Start: 33 @30490 has 16 MA's), (51, 30550), (67, 30598), (84, 30664), (109, 30796),

Gene: Samy_41 Start: 29540, Stop: 29869, Start Num: 43
Candidate Starts for Samy_41:
(Start: 43 @29540 has 1 MA's), (Start: 44 @29543 has 4 MA's), (46, 29564), (70, 29660), (89, 29750), (93, 29762), (107, 29816), (109, 29822),

Gene: Sarshaun_88 Start: 56296, Stop: 56598, Start Num: 32
Candidate Starts for Sarshaun_88:
(Start: 32 @56296 has 4 MA's), (34, 56302), (51, 56374), (95, 56509), (101, 56527), (102, 56533), (113, 56581),

Gene: SassyC_52 Start: 35289, Stop: 34948, Start Num: 38
Candidate Starts for SassyC_52:

(3, 35778), (Start: 38 @35289 has 14 MA's), (47, 35250), (48, 35247), (90, 35070), (105, 35022), (107, 35007), (109, 35001),

Gene: ShakeNBake_47 Start: 34552, Stop: 34211, Start Num: 38
Candidate Starts for ShakeNBake_47:
(Start: 38 @34552 has 14 MA's), (47, 34513), (48, 34510), (50, 34501), (90, 34333), (101, 34300), (105, 34285), (107, 34270), (109, 34264),

Gene: Sheng711_88 Start: 55286, Stop: 55588, Start Num: 32
Candidate Starts for Sheng711_88:
(Start: 32 @55286 has 4 MA's), (34, 55292), (101, 55517),

Gene: Soap141_87 Start: 56296, Stop: 56598, Start Num: 32
Candidate Starts for Soap141_87:
(Start: 32 @56296 has 4 MA's), (34, 56302), (51, 56374), (95, 56509), (101, 56527), (102, 56533), (113, 56581),

Gene: Speedwell_46 Start: 31786, Stop: 32124, Start Num: 33
Candidate Starts for Speedwell_46:
(Start: 33 @31786 has 16 MA's), (55, 31849), (73, 31900), (109, 32086), (110, 32095),

Gene: Spocter_71 Start: 53893, Stop: 54192, Start Num: 44
Candidate Starts for Spocter_71:
(10, 53587), (11, 53617), (22, 53815), (35, 53863), (Start: 44 @53893 has 4 MA's), (64, 53971), (67, 53992), (73, 54007), (107, 54154),

Gene: Stellammi_124 Start: 57456, Stop: 57809, Start Num: 29
Candidate Starts for Stellammi_124:
(Start: 29 @57456 has 8 MA's), (31, 57471), (34, 57480), (89, 57684), (97, 57720), (101, 57744), (109, 57780), (112, 57795), (113, 57798),

Gene: Stephig9_49 Start: 34347, Stop: 33979, Start Num: 23
Candidate Starts for Stephig9_49:
(Start: 23 @34347 has 1 MA's), (Start: 26 @34338 has 1 MA's), (42, 34275), (98, 34080),

Gene: Sudan_42 Start: 30365, Stop: 30712, Start Num: 33
Candidate Starts for Sudan_42:
(Start: 33 @30365 has 16 MA's), (51, 30428), (110, 30683),

Gene: Tierra_62 Start: 41151, Stop: 41546, Start Num: 30
Candidate Starts for Tierra_62:
(Start: 30 @41151 has 7 MA's), (58, 41253), (66, 41286), (71, 41304), (75, 41316), (94, 41418), (105, 41478), (109, 41499), (116, 41535),

Gene: Traft412_50 Start: 36788, Stop: 36441, Start Num: 38
Candidate Starts for Traft412_50:
(Start: 38 @36788 has 14 MA's), (48, 36746), (101, 36536),

Gene: TribleTrouble_59 Start: 41359, Stop: 41751, Start Num: 30
Candidate Starts for TribleTrouble_59:
(Start: 30 @41359 has 7 MA's), (56, 41458), (66, 41494), (71, 41512), (75, 41524), (77, 41539), (79, 41548), (85, 41587), (101, 41665), (105, 41680), (107, 41695), (109, 41701),

Gene: Unicorn_60 Start: 40279, Stop: 40674, Start Num: 30
Candidate Starts for Unicorn_60:
(Start: 30 @40279 has 7 MA's), (58, 40381), (66, 40414), (71, 40432), (75, 40444), (85, 40507), (94, 40546), (105, 40606), (107, 40621), (109, 40627), (116, 40663),

Gene: Urza_42 Start: 29329, Stop: 29736, Start Num: 33
Candidate Starts for Urza_42:
(14, 29116), (Start: 33 @29329 has 16 MA's), (49, 29407), (54, 29425), (59, 29437), (76, 29524), (86, 29578), (91, 29593), (99, 29635), (105, 29674), (109, 29695),

Gene: Vanseggelen_46 Start: 30019, Stop: 30357, Start Num: 33
Candidate Starts for Vanseggelen_46:
(Start: 33 @30019 has 16 MA's), (67, 30127), (84, 30193), (96, 30253), (110, 30334),

Gene: Verabelle_44 Start: 30428, Stop: 30769, Start Num: 33
Candidate Starts for Verabelle_44:
(Start: 33 @30428 has 16 MA's), (41, 30443), (73, 30551), (83, 30602), (110, 30746),

Gene: Verse_41 Start: 31170, Stop: 31511, Start Num: 33
Candidate Starts for Verse_41:
(Start: 33 @31170 has 16 MA's), (61, 31245), (96, 31401), (109, 31473), (110, 31482),

Gene: VieEnRose_41 Start: 29253, Stop: 29663, Start Num: 33
Candidate Starts for VieEnRose_41:
(Start: 33 @29253 has 16 MA's), (54, 29352), (86, 29505), (91, 29520), (100, 29577), (105, 29601), (109, 29622), (115, 29652),

Gene: Virizion_52 Start: 34918, Stop: 34577, Start Num: 38
Candidate Starts for Virizion_52:
(Start: 38 @34918 has 14 MA's), (47, 34879), (48, 34876), (50, 34867), (63, 34828), (90, 34699), (105, 34651), (107, 34636), (109, 34630),

Gene: Wentworth_48 Start: 35004, Stop: 34663, Start Num: 38
Candidate Starts for Wentworth_48:
(Start: 32 @35022 has 4 MA's), (Start: 38 @35004 has 14 MA's), (47, 34965), (48, 34962), (63, 34914), (69, 34881), (106, 34731),

Gene: Wigglewiggle_87 Start: 55845, Stop: 56147, Start Num: 32
Candidate Starts for Wigglewiggle_87:
(Start: 32 @55845 has 4 MA's), (34, 55851), (56, 55932), (81, 55998), (113, 56130),

Gene: Wilkos_49 Start: 34825, Stop: 34484, Start Num: 38
Candidate Starts for Wilkos_49:
(Start: 32 @34843 has 4 MA's), (Start: 38 @34825 has 14 MA's), (47, 34786), (48, 34783), (63, 34735), (69, 34702), (105, 34558), (106, 34552),

Gene: Yara_43 Start: 33601, Stop: 33248, Start Num: 36
Candidate Starts for Yara_43:
(6, 33967), (Start: 36 @33601 has 1 MA's), (48, 33547), (49, 33541), (60, 33514), (69, 33466), (110, 33292), (114, 33277),

Gene: Yosif_43 Start: 30966, Stop: 31310, Start Num: 33
Candidate Starts for Yosif_43:

(14, 30753), (Start: 33 @30966 has 16 MA's), (84, 31149), (94, 31200), (103, 31248), (112, 31290),

Gene: Zakai_88 Start: 56309, Stop: 56611, Start Num: 32
Candidate Starts for Zakai_88:
(Start: 32 @56309 has 4 MA's), (34, 56315), (56, 56396), (81, 56462), (113, 56594),

Gene: ZamZam_43 Start: 30463, Stop: 30807, Start Num: 33
Candidate Starts for ZamZam_43:
(Start: 33 @30463 has 16 MA's), (67, 30571), (109, 30769), (110, 30778),

Gene: phiCAM_39 Start: 32321, Stop: 32662, Start Num: 33
Candidate Starts for phiCAM_39:
(Start: 33 @32321 has 16 MA's), (51, 32375), (61, 32396), (96, 32552), (109, 32624), (111, 32636),