

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 292693 Report

This analysis was run 04/18/26 on database version 643.

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 292693 has 73 members, 21 are drafts.

Phages represented in each track:

- Track 1 : Big3_47
- Track 2 : Traft412_50, Pelly_47, Michley_47, Fushigi_46, Dexes_48, MrGordo_47
- Track 3 : Stephig9_49
- Track 4 : MalagasyRose_59
- Track 5 : JayCookie_98, Conboy_96, MoyaNatalis_97
- Track 6 : ArV1_085
- Track 7 : Kellezio_88
- Track 8 : Conan_42, Dexers_40, Alsaber_42, Sudan_41, Kaine_41
- Track 9 : phiCAM_39
- Track 10 : Verse_41, Amela_41, SunkenRoot_42
- Track 11 : Vanseggelen_46
- Track 12 : ZamZam_41
- Track 13 : Jhitchelle_40
- Track 14 : Provolone_42, Pavo_42
- Track 15 : Celery_44
- Track 16 : ElGato_42
- Track 17 : Yosif_43
- Track 18 : Speedwell_46
- Track 19 : Verabelle_44
- Track 20 : Saftant_41
- Track 21 : Itza_42, Urza_42, Celia_42
- Track 22 : VieEnRose_41
- Track 23 : Wilkos_49
- Track 24 : ShakeNBake_47, PHTowN_47, Lizz_47
- Track 25 : Yara_43
- Track 26 : Dryad_52
- Track 27 : Greenbelt_45
- Track 28 : Wentworth_48
- Track 29 : Rooney_47, Virizion_52, Gibson_47
- Track 30 : SassyC_52
- Track 31 : Keanu_70
- Track 32 : Spocter_71
- Track 33 : Kokushibo_73, Hiyaa_72

- Track 34 : Galactica_71
- Track 35 : JanetJ_41
- Track 36 : Aoka_44
- Track 37 : Hereford_60
- Track 38 : Soap141_87, Sarshaun_88
- Track 39 : MkaliMitinis3_89, Zakai_88, Loadrie_86, Wigglewiggle_87, OverPar_89
- Track 40 : Sheng711_88, BrainDrainer_88, PYPDinur_87, FarmResident_88
- Track 41 : Douzhi_87
- Track 42 : ChutneyChips_87
- Track 43 : Samy_41
- Track 44 : 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 18, it was called in 19 of the 52 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_40, Kaine_41, Pavo_42, Provolone_42, Saftant_41, Speedwell_46, Sudan_41, SunkenRoot_42, Urza_42, Vanseggelen_46, Verabelle_44, Verse_41, VieEnRose_41, Yosif_43, ZamZam_41, 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, ChutneyChips_87, Conboy_96, Dexes_48, Douzhi_87, Dryad_52, Elener_63, FarmResident_88, Fushigi_46, Galactica_71, Gibson_47, Greenbelt_45, Hereford_60, Hiyaa_72, JanetJ_41, JayCookie_98, Keanu_70, KellEzio_88, Kokushibo_73, Lizz_47, Loadrie_86, MalagasyRose_59, Michley_47, MkaliMitinis3_89, MoyaNatalis_97, MrGordo_47, OverPar_89, PHTown_47, PYPDinur_87, Pelly_47, Rooney_47, Samy_41, Sarshaun_88, SassyC_52, ShakeNBake_47, Sheng711_88, Soap141_87, Spocter_71, Stephig9_49, Traft412_50, Virizion_52, Wentworth_48, Wigglewiggle_87, Wilkos_49, Yara_43, Zakai_88,

Summary by start number:

Start 16:

- Found in 4 of 73 (5.5%) of genes in pham
- Manual Annotations of this start: 2 of 52
- 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 18:

- Found in 24 of 73 (32.9%) of genes in pham
- Manual Annotations of this start: 19 of 52
- 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_40 (BD3), Kaine_41 (BD3), Pavo_42 (BD3), Provolone_42 (BD3), Saftant_41 (BD3), Speedwell_46 (BD3), Sudan_41 (BD3), SunkenRoot_42 (BD3), Urza_42 (BD6), Vanseggelen_46 (BD3), Verabelle_44 (BD3), Verse_41 (BD3), VieEnRose_41 (BD6), Yosif_43 (BD3), ZamZam_41 (BD3), phiCAM_39 (BD3),

Start 20:

- Found in 1 of 73 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yara_43 (BN),

Start 21:

- Found in 1 of 73 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Greenbelt_45 (BN),

Start 22:

- Found in 22 of 73 (30.1%) of genes in pham
- Manual Annotations of this start: 15 of 52
- Called 81.8% of time when present
- Phage (with cluster) where this start called: Big3_47 (A1), Dexes_48 (A1), Dryad_52 (BN), Elener_63 (singleton), 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 23:

- Found in 2 of 73 (2.7%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Stephig9_49 (A8),

Start 24:

- Found in 3 of 73 (4.1%) of genes in pham
- Manual Annotations of this start: 2 of 52
- 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 1 of 73 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KellEzio_88 (AT),

Start 28:

- Found in 2 of 73 (2.7%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 50.0% of time when present

- Phage (with cluster) where this start called: Samy_41 (singleton),

Start 32:

- Found in 1 of 73 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MalagasyRose_59 (AG),

Start 33:

- Found in 5 of 73 (6.8%) of genes in pham
- Manual Annotations of this start: 4 of 52
- Called 100.0% 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),

Start 35:

- Found in 14 of 73 (19.2%) of genes in pham
- Manual Annotations of this start: 4 of 52
- 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), Wigglewiggles_87 (L2), Zakai_88 (L2),

Start 37:

- Found in 23 of 73 (31.5%) of genes in pham
- No Manual Annotations of this start.
- Called 4.3% of time when present
- Phage (with cluster) where this start called: ChutneyChips_87 (L4),

Summary by clusters:

There are 13 clusters represented in this pham: singleton, AG, BN, A1, L4, BD6, L2, BQ, BD3, A8, AT, AR, FO,

Info for manual annotations of cluster A1:

- Start number 22 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 32 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster AR:

- Start number 16 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 18 was manually annotated 15 times for cluster BD3.

Info for manual annotations of cluster BD6:

- Start number 18 was manually annotated 4 times for cluster BD6.

Info for manual annotations of cluster BN:

- Start number 20 was manually annotated 1 time for cluster BN.
- Start number 21 was manually annotated 1 time for cluster BN.
- Start number 22 was manually annotated 7 times for cluster BN.

Info for manual annotations of cluster BQ:

- Start number 33 was manually annotated 4 times for cluster BQ.

Info for manual annotations of cluster FO:

- Start number 24 was manually annotated 2 times for cluster FO.

Info for manual annotations of cluster L2:

- Start number 35 was manually annotated 4 times for cluster L2.

Gene Information:

Gene: Alsaber_42 Start: 30369, Stop: 30716, Start Num: 18

Candidate Starts for Alsaber_42:

(Start: 18 @30369 has 19 MA's), (43, 30432), (89, 30687),

Gene: Amela_41 Start: 31176, Stop: 31517, Start Num: 18

Candidate Starts for Amela_41:

(Start: 18 @31176 has 19 MA's), (49, 31251), (75, 31407), (88, 31479), (89, 31488),

Gene: Aoka_44 Start: 31288, Stop: 31638, Start Num: 24

Candidate Starts for Aoka_44:

(Start: 24 @31288 has 2 MA's), (56, 31408),

Gene: ArV1_085 Start: 61509, Stop: 61898, Start Num: 16

Candidate Starts for ArV1_085:

(Start: 16 @61509 has 2 MA's), (Start: 22 @61539 has 15 MA's), (42, 61599), (64, 61695), (75, 61785), (77, 61797),

Gene: Big3_47 Start: 35903, Stop: 35556, Start Num: 22

Candidate Starts for Big3_47:

(Start: 22 @35903 has 15 MA's), (38, 35861), (77, 35675), (81, 35651),

Gene: BrainDrainer_88 Start: 55558, Stop: 55860, Start Num: 35

Candidate Starts for BrainDrainer_88:

(Start: 35 @55558 has 4 MA's), (37, 55564), (81, 55789),

Gene: Celery_44 Start: 30302, Stop: 30649, Start Num: 18

Candidate Starts for Celery_44:

(Start: 18 @30302 has 19 MA's), (43, 30365), (58, 30413), (59, 30425), (88, 30611), (89, 30620),

Gene: Celia_42 Start: 29394, Stop: 29801, Start Num: 18

Candidate Starts for Celia_42:

(10, 29181), (Start: 18 @29394 has 19 MA's), (41, 29472), (45, 29490), (48, 29502), (62, 29589), (68, 29643), (71, 29658), (77, 29700), (85, 29739), (88, 29760),

Gene: ChutneyChips_87 Start: 55447, Stop: 55743, Start Num: 37

Candidate Starts for ChutneyChips_87:

(30, 55420), (37, 55447), (44, 55474), (66, 55567), (81, 55672), (89, 55717),

Gene: Conan_42 Start: 30263, Stop: 30610, Start Num: 18

Candidate Starts for Conan_42:

(Start: 18 @30263 has 19 MA's), (43, 30326), (89, 30581),

Gene: Conboy_96 Start: 62664, Stop: 63050, Start Num: 16

Candidate Starts for Conboy_96:

(Start: 16 @62664 has 2 MA's), (Start: 22 @62694 has 15 MA's), (42, 62754), (66, 62877), (75, 62937), (77, 62949),

Gene: Dexers_40 Start: 30287, Stop: 30634, Start Num: 18

Candidate Starts for Dexers_40:

(Start: 18 @30287 has 19 MA's), (43, 30350), (89, 30605),

Gene: Dexes_48 Start: 36500, Stop: 36153, Start Num: 22

Candidate Starts for Dexes_48:

(Start: 22 @36500 has 15 MA's), (38, 36458), (81, 36248),

Gene: Douzhi_87 Start: 55217, Stop: 55519, Start Num: 35

Candidate Starts for Douzhi_87:

(Start: 35 @55217 has 4 MA's), (37, 55223),

Gene: Dryad_52 Start: 35720, Stop: 35379, Start Num: 22

Candidate Starts for Dryad_52:

(Start: 22 @35720 has 15 MA's), (37, 35681), (38, 35678), (49, 35630), (55, 35597), (84, 35456), (86, 35447),

Gene: ElGato_42 Start: 29927, Stop: 30274, Start Num: 18

Candidate Starts for ElGato_42:

(Start: 18 @29927 has 19 MA's), (43, 29990), (58, 30038), (59, 30050), (60, 30053), (69, 30125), (89, 30245),

Gene: Elener_63 Start: 36486, Stop: 36878, Start Num: 22

Candidate Starts for Elener_63:

(1, 35673), (3, 36012), (5, 36153), (14, 36408), (Start: 22 @36486 has 15 MA's), (Start: 28 @36498 has 1 MA's), (61, 36648), (75, 36762), (85, 36813),

Gene: FarmResident_88 Start: 54956, Stop: 55258, Start Num: 35

Candidate Starts for FarmResident_88:

(Start: 35 @54956 has 4 MA's), (37, 54962), (81, 55187),

Gene: Fushigi_46 Start: 33901, Stop: 33554, Start Num: 22

Candidate Starts for Fushigi_46:

(Start: 22 @33901 has 15 MA's), (38, 33859), (81, 33649),

Gene: Galactica_71 Start: 52489, Stop: 52794, Start Num: 33

Candidate Starts for Galactica_71:

(6, 52147), (7, 52171), (8, 52201), (11, 52321), (13, 52342), (19, 52453), (Start: 33 @52489 has 4 MA's), (Start: 35 @52501 has 4 MA's), (73, 52672),

Gene: Gibson_47 Start: 34722, Stop: 34381, Start Num: 22

Candidate Starts for Gibson_47:

(Start: 22 @34722 has 15 MA's), (37, 34683), (38, 34680), (40, 34671), (49, 34632), (76, 34503), (85, 34455), (87, 34440), (88, 34434),

Gene: Greenbelt_45 Start: 31434, Stop: 31075, Start Num: 21

Candidate Starts for Greenbelt_45:

(19, 31440), (Start: 21 @31434 has 1 MA's), (38, 31380), (39, 31374), (46, 31347), (55, 31299), (85, 31155),

Gene: Hereford_60 Start: 30404, Stop: 30754, Start Num: 24

Candidate Starts for Hereford_60:

(Start: 24 @30404 has 2 MA's), (56, 30524),

Gene: Hiyaa_72 Start: 53798, Stop: 54097, Start Num: 33

Candidate Starts for Hiyaa_72:

(7, 53492), (8, 53522), (15, 53720), (19, 53768), (Start: 33 @53798 has 4 MA's), (50, 53876), (57, 53912), (87, 54059),

Gene: Itza_42 Start: 29308, Stop: 29715, Start Num: 18

Candidate Starts for Itza_42:

(10, 29095), (Start: 18 @29308 has 19 MA's), (41, 29386), (45, 29404), (48, 29416), (62, 29503), (68, 29557), (71, 29572), (77, 29614), (85, 29653), (88, 29674),

Gene: JanetJ_41 Start: 31595, Stop: 31966, Start Num: 24

Candidate Starts for JanetJ_41:

(Start: 24 @31595 has 2 MA's),

Gene: JayCookie_98 Start: 63408, Stop: 63794, Start Num: 16

Candidate Starts for JayCookie_98:

(Start: 16 @63408 has 2 MA's), (Start: 22 @63438 has 15 MA's), (42, 63498), (66, 63621), (75, 63681), (77, 63693),

Gene: Jhitchelle_40 Start: 29800, Stop: 30153, Start Num: 18

Candidate Starts for Jhitchelle_40:

(Start: 18 @29800 has 19 MA's), (Start: 23 @29815 has 1 MA's), (88, 30115), (89, 30124),

Gene: Kaine_41 Start: 30078, Stop: 30425, Start Num: 18

Candidate Starts for Kaine_41:

(Start: 18 @30078 has 19 MA's), (43, 30141), (89, 30396),

Gene: Keanu_70 Start: 53661, Stop: 53963, Start Num: 33

Candidate Starts for Keanu_70:

(9, 53391), (12, 53517), (15, 53583), (19, 53631), (Start: 33 @53661 has 4 MA's), (Start: 35 @53673 has 4 MA's), (57, 53775), (85, 53907), (87, 53922),

Gene: KellEzio_88 Start: 52796, Stop: 53146, Start Num: 26

Candidate Starts for KellEzio_88:

(Start: 26 @52796 has 1 MA's), (34, 52814), (53, 52913), (75, 53030), (77, 53042), (86, 53087), (87, 53096),

Gene: Kokushibo_73 Start: 53830, Stop: 54129, Start Num: 33

Candidate Starts for Kokushibo_73:

(7, 53524), (8, 53554), (15, 53752), (19, 53800), (Start: 33 @53830 has 4 MA's), (50, 53908), (57, 53944), (87, 54091),

Gene: Lizz_47 Start: 34536, Stop: 34195, Start Num: 22

Candidate Starts for Lizz_47:

(Start: 22 @34536 has 15 MA's), (37, 34497), (38, 34494), (40, 34485), (76, 34317), (81, 34284), (85, 34269), (87, 34254), (88, 34248),

Gene: Loadrie_86 Start: 56068, Stop: 56370, Start Num: 35

Candidate Starts for Loadrie_86:

(Start: 35 @56068 has 4 MA's), (37, 56074), (54, 56155), (70, 56221), (92, 56353),

Gene: MalagasyRose_59 Start: 39738, Stop: 40061, Start Num: 32

Candidate Starts for MalagasyRose_59:

(31, 39735), (Start: 32 @39738 has 1 MA's), (34, 39744), (67, 39891), (70, 39909), (71, 39912), (85, 40002), (86, 40008), (87, 40017), (88, 40023),

Gene: Michley_47 Start: 35355, Stop: 35008, Start Num: 22

Candidate Starts for Michley_47:

(Start: 22 @35355 has 15 MA's), (38, 35313), (81, 35103),

Gene: MkaliMitinis3_89 Start: 56052, Stop: 56354, Start Num: 35

Candidate Starts for MkaliMitinis3_89:

(Start: 35 @56052 has 4 MA's), (37, 56058), (54, 56139), (70, 56205), (92, 56337),

Gene: MoyaNatalis_97 Start: 62854, Stop: 63240, Start Num: 16

Candidate Starts for MoyaNatalis_97:

(Start: 16 @62854 has 2 MA's), (Start: 22 @62884 has 15 MA's), (42, 62944), (66, 63067), (75, 63127), (77, 63139),

Gene: MrGordo_47 Start: 35149, Stop: 34802, Start Num: 22

Candidate Starts for MrGordo_47:

(Start: 22 @35149 has 15 MA's), (38, 35107), (81, 34897),

Gene: OverPar_89 Start: 56068, Stop: 56370, Start Num: 35

Candidate Starts for OverPar_89:

(Start: 35 @56068 has 4 MA's), (37, 56074), (54, 56155), (70, 56221), (92, 56353),

Gene: PHTowN_47 Start: 34534, Stop: 34193, Start Num: 22

Candidate Starts for PHTowN_47:

(Start: 22 @34534 has 15 MA's), (37, 34495), (38, 34492), (40, 34483), (76, 34315), (81, 34282), (85, 34267), (87, 34252), (88, 34246),

Gene: PYPDinur_87 Start: 55810, Stop: 56112, Start Num: 35

Candidate Starts for PYPDinur_87:

(Start: 35 @55810 has 4 MA's), (37, 55816), (81, 56041),

Gene: Pavo_42 Start: 30536, Stop: 30874, Start Num: 18

Candidate Starts for Pavo_42:

(Start: 18 @30536 has 19 MA's), (25, 30551), (43, 30590), (63, 30668), (69, 30725), (72, 30740), (74, 30755), (75, 30764), (88, 30836),

Gene: Pelly_47 Start: 35989, Stop: 35642, Start Num: 22

Candidate Starts for Pelly_47:

(Start: 22 @35989 has 15 MA's), (38, 35947), (81, 35737),

Gene: Provolone_42 Start: 29918, Stop: 30256, Start Num: 18

Candidate Starts for Provolone_42:

(Start: 18 @29918 has 19 MA's), (25, 29933), (43, 29972), (63, 30050), (69, 30107), (72, 30122), (74, 30137), (75, 30146), (88, 30218),

Gene: Rooney_47 Start: 34719, Stop: 34378, Start Num: 22

Candidate Starts for Rooney_47:

(Start: 22 @34719 has 15 MA's), (37, 34680), (38, 34677), (40, 34668), (49, 34629), (76, 34500), (85, 34452), (87, 34437), (88, 34431),

Gene: Saftant_41 Start: 30490, Stop: 30834, Start Num: 18

Candidate Starts for Saftant_41:

(Start: 18 @30490 has 19 MA's), (43, 30550), (58, 30598), (66, 30664), (88, 30796),

Gene: Samy_41 Start: 29540, Stop: 29869, Start Num: 28

Candidate Starts for Samy_41:

(Start: 28 @29540 has 1 MA's), (29, 29543), (36, 29564), (56, 29660), (75, 29750), (77, 29762), (87, 29816), (88, 29822),

Gene: Sarshaun_88 Start: 56296, Stop: 56598, Start Num: 35

Candidate Starts for Sarshaun_88:

(Start: 35 @56296 has 4 MA's), (37, 56302), (51, 56374), (78, 56509), (81, 56527), (82, 56533), (92, 56581),

Gene: SassyC_52 Start: 35289, Stop: 34948, Start Num: 22

Candidate Starts for SassyC_52:

(2, 35778), (Start: 22 @35289 has 15 MA's), (37, 35250), (38, 35247), (76, 35070), (85, 35022), (87, 35007), (88, 35001),

Gene: ShakeNBake_47 Start: 34552, Stop: 34211, Start Num: 22

Candidate Starts for ShakeNBake_47:

(Start: 22 @34552 has 15 MA's), (37, 34513), (38, 34510), (40, 34501), (76, 34333), (81, 34300), (85, 34285), (87, 34270), (88, 34264),

Gene: Sheng711_88 Start: 55286, Stop: 55588, Start Num: 35

Candidate Starts for Sheng711_88:

(Start: 35 @55286 has 4 MA's), (37, 55292), (81, 55517),

Gene: Soap141_87 Start: 56296, Stop: 56598, Start Num: 35

Candidate Starts for Soap141_87:

(Start: 35 @56296 has 4 MA's), (37, 56302), (51, 56374), (78, 56509), (81, 56527), (82, 56533), (92, 56581),

Gene: Speedwell_46 Start: 31786, Stop: 32124, Start Num: 18

Candidate Starts for Speedwell_46:

(Start: 18 @31786 has 19 MA's), (47, 31849), (59, 31900), (88, 32086), (89, 32095),

Gene: Spocter_71 Start: 53893, Stop: 54192, Start Num: 33

Candidate Starts for Spocter_71:

(7, 53587), (8, 53617), (15, 53815), (19, 53863), (Start: 33 @53893 has 4 MA's), (50, 53971), (52, 53992), (57, 54007), (87, 54154),

Gene: Stephig9_49 Start: 34347, Stop: 33979, Start Num: 23

Candidate Starts for Stephig9_49:

(Start: 23 @34347 has 1 MA's), (27, 34338), (44, 34275), (79, 34080),

Gene: Sudan_41 Start: 30365, Stop: 30712, Start Num: 18

Candidate Starts for Sudan_41:

(Start: 18 @30365 has 19 MA's), (43, 30428), (89, 30683),

Gene: SunkenRoot_42 Start: 30976, Stop: 31317, Start Num: 18

Candidate Starts for SunkenRoot_42:

(Start: 18 @30976 has 19 MA's), (49, 31051), (75, 31207), (88, 31279), (89, 31288),

Gene: Traft412_50 Start: 36788, Stop: 36441, Start Num: 22

Candidate Starts for Traft412_50:

(Start: 22 @36788 has 15 MA's), (38, 36746), (81, 36536),

Gene: Urza_42 Start: 29329, Stop: 29736, Start Num: 18

Candidate Starts for Urza_42:

(10, 29116), (Start: 18 @29329 has 19 MA's), (41, 29407), (45, 29425), (48, 29437), (62, 29524), (68, 29578), (71, 29593), (77, 29635), (85, 29674), (88, 29695),

Gene: Vanseggelen_46 Start: 30019, Stop: 30357, Start Num: 18

Candidate Starts for Vanseggelen_46:

(Start: 18 @30019 has 19 MA's), (58, 30127), (66, 30193), (75, 30253), (89, 30334),

Gene: Verabelle_44 Start: 30428, Stop: 30769, Start Num: 18

Candidate Starts for Verabelle_44:

(Start: 18 @30428 has 19 MA's), (25, 30443), (59, 30551), (65, 30602), (89, 30746),

Gene: Verse_41 Start: 31170, Stop: 31511, Start Num: 18

Candidate Starts for Verse_41:

(Start: 18 @31170 has 19 MA's), (49, 31245), (75, 31401), (88, 31473), (89, 31482),

Gene: VieEnRose_41 Start: 29253, Stop: 29663, Start Num: 18

Candidate Starts for VieEnRose_41:

(Start: 18 @29253 has 19 MA's), (45, 29352), (68, 29505), (71, 29520), (80, 29577), (85, 29601), (88, 29622), (94, 29652),

Gene: Virizion_52 Start: 34918, Stop: 34577, Start Num: 22

Candidate Starts for Virizion_52:

(Start: 22 @34918 has 15 MA's), (37, 34879), (38, 34876), (40, 34867), (49, 34828), (76, 34699), (85, 34651), (87, 34636), (88, 34630),

Gene: Wentworth_48 Start: 35004, Stop: 34663, Start Num: 22

Candidate Starts for Wentworth_48:

(17, 35022), (Start: 22 @35004 has 15 MA's), (37, 34965), (38, 34962), (49, 34914), (55, 34881), (86, 34731),

Gene: Wigglewiggles_87 Start: 55845, Stop: 56147, Start Num: 35

Candidate Starts for Wigglewiggles_87:

(Start: 35 @55845 has 4 MA's), (37, 55851), (54, 55932), (70, 55998), (92, 56130),

Gene: Wilkos_49 Start: 34825, Stop: 34484, Start Num: 22

Candidate Starts for Wilkos_49:

(17, 34843), (Start: 22 @34825 has 15 MA's), (37, 34786), (38, 34783), (49, 34735), (55, 34702), (85, 34558), (86, 34552),

Gene: Yara_43 Start: 33601, Stop: 33248, Start Num: 20

Candidate Starts for Yara_43:

(4, 33967), (Start: 20 @33601 has 1 MA's), (38, 33547), (39, 33541), (46, 33514), (55, 33466), (89, 33292), (93, 33277),

Gene: Yosif_43 Start: 30966, Stop: 31310, Start Num: 18

Candidate Starts for Yosif_43:

(10, 30753), (Start: 18 @30966 has 19 MA's), (66, 31149), (74, 31200), (83, 31248), (91, 31290),

Gene: Zakai_88 Start: 56309, Stop: 56611, Start Num: 35

Candidate Starts for Zakai_88:

(Start: 35 @56309 has 4 MA's), (37, 56315), (54, 56396), (70, 56462), (92, 56594),

Gene: ZamZam_41 Start: 30463, Stop: 30807, Start Num: 18

Candidate Starts for ZamZam_41:

(Start: 18 @30463 has 19 MA's), (58, 30571), (88, 30769), (89, 30778),

Gene: phiCAM_39 Start: 32321, Stop: 32662, Start Num: 18

Candidate Starts for phiCAM_39:

(Start: 18 @32321 has 19 MA's), (43, 32375), (49, 32396), (75, 32552), (88, 32624), (90, 32636),