Pham 338275


1: Delian_23 + 22
2: Gambino_25 + 4
3: Pipp_23 + 1
4: Murp_24 + 2
5: Jablanski_26 + 3
6: BeeGee_24 + 3
7: Dorito_22 + 3
8: Kiko_25
9: Ailee_40 + 1
10: RiverRaider_44
11: Bibwit_42
12: Keitabear_43
13: Hans_44 + 6
14: EMoore_40
15: Belphegor_43
16: PhorbesPhlower_22 + 2
17: ODay_30
18: Malibo_25

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 338275 Report

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

Pham number 338275 has 65 members, 1 are drafts.

Phages represented in each track:
• Track 1 : Delian_23, UmaThurman_23, JasperJr_23, Zarbodnamra_23, Melba_23, Fenry_22, Zilla_23, Archis_24, Malachai_24, Jalammah_25, BlingBling_23, Barco_23, Samba_23, MintFen_23, Guacamole_23, Utz_23, CaptainKirk2_23, Hitter_23, Walrus_25, PhrostedPhlake_25, Lysidious_24, Mellie_22, Begonia_24
• Track 2 : Gambino_25, Azula_25, Frokostdame_23, Blueberry_25, MissRona_25
• Track 3 : Pipp_23, Wisp_22
• Track 4 : Murp_24, Bunnybear_22, CheeseSpider_26
• Track 5 : Jablanski_26, Pytheas_26, Posh_26, Wrigley_26
• Track 6 : BeeGee_24, Confidence_24, Cashline_24, Denise_20
• Track 7 : Dorito_22, PhriskyACE_22, Tuti_23, Invectra_23
• Track 8 : Kiko_25
• Track 9 : Ailee_40, Sedona_43
• Track 10 : RiverRaider_44
• Track 11 : Bibwit_42
• Track 12 : Keitabear_43
• Track 13 : Hans_44, Ali17_40, MelBins_43, Phauci_35, Leonard_42, Inspectinfecti_43, Phinally_42
• Track 14 : EMoore_40
• Track 15 : Belphegor_43
• Track 16 : PhorbesPhlower_22, Morkie_22, InLimbo_23
• Track 17 : ODay_30
• Track 18 : Malibo_25

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

The start number called the most often in the published annotations is 7, it was called in 38 of the 64 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Archis_24, Azula_25, Barco_23, Begonia_24, BlingBling_23, Blueberry_25, Bunnybear_22, CaptainKirk2_23, CheeseSpider_26, Delian_23, Dorito_22, Fenry_22, Frokostdame_23, Gambino_25, Guacamole_23, Hitter_23, InLimbo_23, Invectra_23, Jalammah_25, JasperJr_23, Lysidious_24, Malachai_24, Malibo_25, Melba_23, Mellie_22, MintFen_23, MissRona_25, Morkie_22, Murp_24, PhorbesPhlower_22,

PhriskyACE_22, PhrostedPhlake_25, Samba_23, Tuti_23, UmaThurman_23, Utz_23, Walrus_25, Zarbodnamra_23, Zilla_23,

Genes that have the "Most Annotated" start but do not call it:
• Pipp_23, Wisp_22,

Genes that do not have the "Most Annotated" start:
• Ailee_40, Ali17_40, BeeGee_24, Belphegor_43, Bibwit_42, Cashline_24, Confidence_24, Denise_20, EMoore_40, Hans_44, Inspectinfecti_43, Jablanski_26, Keitabear_43, Kiko_25, Leonard_42, MelBins_43, ODay_30, Phauci_35, Phinally_42, Posh_26, Pytheas_26, RiverRaider_44, Sedona_43, Wrigley_26,

Summary by start number:

Start 2:
• Found in 14 of 65 (21.5%) of genes in pham
• Manual Annotations of this start: 2 of 64
• Called 14.3% of time when present
• Phage (with cluster) where this start called: Keitabear_43 (DE1), RiverRaider_44 (DE1),

Start 3:
• Found in 14 of 65 (21.5%) of genes in pham
• Manual Annotations of this start: 12 of 64
• Called 85.7% of time when present
• Phage (with cluster) where this start called: Ailee_40 (DE1), Ali17_40 (DE2), Belphegor_43 (DE2), Bibwit_42 (DE1), EMoore_40 (DE2), Hans_44 (DE2), Inspectinfecti_43 (DE2), Leonard_42 (DE2), MelBins_43 (DE2), Phauci_35 (DE2), Phinally_42 (DE2), Sedona_43 (DE1),

Start 4:
• Found in 10 of 65 (15.4%) of genes in pham
• Manual Annotations of this start: 2 of 64
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Kiko_25 (DB), ODay_30 (DN),

Start 5:
• Found in 10 of 65 (15.4%) of genes in pham
• Manual Annotations of this start: 8 of 64
• Called 80.0% of time when present
• Phage (with cluster) where this start called: BeeGee_24 (CY5), Cashline_24 (CY6), Confidence_24 (CY1), Denise_20 (CZ5), Jablanski_26 (CY3), Posh_26 (CY4), Pytheas_26 (CY3), Wrigley_26 (CY4),

Start 6:
• Found in 36 of 65 (55.4%) of genes in pham
• Manual Annotations of this start: 2 of 64
• Called 5.6% of time when present
• Phage (with cluster) where this start called: Pipp_23 (CV), Wisp_22 (CV),

Start 7:
• Found in 41 of 65 (63.1%) of genes in pham
• Manual Annotations of this start: 38 of 64

• Called 95.1% of time when present
• Phage (with cluster) where this start called: Archis_24 (CV), Azula_25 (CV), Barco_23 (CV), Begonia_24 (CV), BlingBling_23 (CV), Blueberry_25 (CV), Bunnybear_22 (CZ), CaptainKirk2_23 (CV), CheeseSpider_26 (CV), Delian_23 (CV), Dorito_22 (CZ4), Fenry_22 (CV), Frokostdame_23 (CV), Gambino_25 (CV), Guacamole_23 (CV), Hitter_23 (CV), InLimbo_23 (DH), Invectra_23 (CZ4), Jalammah_25 (CV), JasperJr_23 (CV), Lysidious_24 (CV), Malachai_24 (CV), Malibo_25 (DW), Melba_23 (CV), Mellie_22 (CV), MintFen_23 (CV), MissRona_25 (CV), Morkie_22 (DH), Murp_24 (CV), PhorbesPhlower_22 (DH), PhriskyACE_22 (CZ4), PhrostedPhlake_25 (CV), Samba_23 (CV), Tuti_23 (CZ4), UmaThurman_23 (CV), Utz_23 (CV), Walrus_25 (CV), Zarbodnamra_23 (CV), Zilla_23 (CV),

Summary by clusters:

There are 15 clusters represented in this pham: CY3, DN, CY1, DH, CY5, CY4, DE1, DE2, DB, CZ4, CZ5, CZ, DW, CV, CY6,

Info for manual annotations of cluster CV:
•Start number 6 was manually annotated 2 times for cluster CV.
•Start number 7 was manually annotated 30 times for cluster CV.

Info for manual annotations of cluster CY1:
•Start number 5 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CY3:
•Start number 5 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:
•Start number 5 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster CY5:
•Start number 5 was manually annotated 1 time for cluster CY5.

Info for manual annotations of cluster CY6:
•Start number 5 was manually annotated 1 time for cluster CY6.

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

Info for manual annotations of cluster CZ4:
•Start number 7 was manually annotated 4 times for cluster CZ4.

Info for manual annotations of cluster CZ5:
•Start number 5 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster DB:
•Start number 4 was manually annotated 1 time for cluster DB.

Info for manual annotations of cluster DE1:
•Start number 2 was manually annotated 2 times for cluster DE1.
•Start number 3 was manually annotated 3 times for cluster DE1.

Info for manual annotations of cluster DE2:

•Start number 3 was manually annotated 9 times for cluster DE2.

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

Info for manual annotations of cluster DN:
•Start number 4 was manually annotated 1 time for cluster DN.

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

Gene Information:

Gene: Ailee_40 Start: 38298, Stop: 38588, Start Num: 3
Candidate Starts for Ailee_40:
(Start: 2 @38259 has 2 MA's), (Start: 3 @38298 has 12 MA's), (10, 38400), (14, 38445), (15, 38448), (17, 38457), (25, 38520),

Gene: Ali17_40 Start: 37604, Stop: 37882, Start Num: 3
Candidate Starts for Ali17_40:
(Start: 2 @37565 has 2 MA's), (Start: 3 @37604 has 12 MA's), (9, 37694), (14, 37739), (15, 37742), (19, 37763), (25, 37814),

Gene: Archis_24 Start: 20670, Stop: 20924, Start Num: 7
Candidate Starts for Archis_24:
(Start: 6 @20664 has 2 MA's), (Start: 7 @20670 has 38 MA's), (12, 20745), (20, 20787), (23, 20817), (25, 20832), (27, 20838),

Gene: Azula_25 Start: 20771, Stop: 21025, Start Num: 7
Candidate Starts for Azula_25:
(Start: 6 @20765 has 2 MA's), (Start: 7 @20771 has 38 MA's), (12, 20846), (20, 20888), (25, 20933), (27, 20939),

Gene: Barco_23 Start: 20459, Stop: 20713, Start Num: 7
Candidate Starts for Barco_23:
(Start: 6 @20453 has 2 MA's), (Start: 7 @20459 has 38 MA's), (12, 20534), (20, 20576), (23, 20606), (25, 20621), (27, 20627),

Gene: BeeGee_24 Start: 21065, Stop: 21334, Start Num: 5
Candidate Starts for BeeGee_24:
(Start: 4 @21059 has 2 MA's), (Start: 5 @21065 has 8 MA's), (10, 21128), (11, 21137), (12, 21161), (13, 21164), (21, 21206), (22, 21227), (25, 21254),

Gene: Begonia_24 Start: 20940, Stop: 21194, Start Num: 7
Candidate Starts for Begonia_24:
(Start: 6 @20934 has 2 MA's), (Start: 7 @20940 has 38 MA's), (12, 21015), (20, 21057), (23, 21087), (25, 21102), (27, 21108),

Gene: Belphegor_43 Start: 39646, Stop: 39933, Start Num: 3
Candidate Starts for Belphegor_43:

(Start: 2 @39607 has 2 MA's), (Start: 3 @39646 has 12 MA's), (10, 39745), (15, 39793), (19, 39814), (25, 39865), (28, 39874),

Gene: Bibwit_42 Start: 38235, Stop: 38522, Start Num: 3
Candidate Starts for Bibwit_42:
(1, 38127), (Start: 2 @38196 has 2 MA's), (Start: 3 @38235 has 12 MA's), (15, 38382), (19, 38403), (24, 38442), (25, 38454), (28, 38463),

Gene: BlingBling_23 Start: 20459, Stop: 20713, Start Num: 7
Candidate Starts for BlingBling_23:
(Start: 6 @20453 has 2 MA's), (Start: 7 @20459 has 38 MA's), (12, 20534), (20, 20576), (23, 20606), (25, 20621), (27, 20627),

Gene: Blueberry_25 Start: 20771, Stop: 21025, Start Num: 7
Candidate Starts for Blueberry_25:
(Start: 6 @20765 has 2 MA's), (Start: 7 @20771 has 38 MA's), (12, 20846), (20, 20888), (25, 20933), (27, 20939),

Gene: Bunnybear_22 Start: 21536, Stop: 21790, Start Num: 7
Candidate Starts for Bunnybear_22:
(Start: 6 @21530 has 2 MA's), (Start: 7 @21536 has 38 MA's), (8, 21575), (12, 21611), (20, 21653), (23, 21683), (25, 21698), (27, 21704),

Gene: CaptainKirk2_23 Start: 20480, Stop: 20734, Start Num: 7
Candidate Starts for CaptainKirk2_23:
(Start: 6 @20474 has 2 MA's), (Start: 7 @20480 has 38 MA's), (12, 20555), (20, 20597), (23, 20627), (25, 20642), (27, 20648),

Gene: Cashline_24 Start: 20932, Stop: 21201, Start Num: 5
Candidate Starts for Cashline_24:
(Start: 4 @20926 has 2 MA's), (Start: 5 @20932 has 8 MA's), (10, 20995), (11, 21004), (12, 21028), (13, 21031), (21, 21073), (22, 21094), (25, 21121),

Gene: CheeseSpider_26 Start: 21025, Stop: 21279, Start Num: 7
Candidate Starts for CheeseSpider_26:
(Start: 6 @21019 has 2 MA's), (Start: 7 @21025 has 38 MA's), (8, 21064), (12, 21100), (20, 21142), (23, 21172), (25, 21187), (27, 21193),

Gene: Confidence_24 Start: 21095, Stop: 21364, Start Num: 5
Candidate Starts for Confidence_24:
(Start: 4 @21089 has 2 MA's), (Start: 5 @21095 has 8 MA's), (10, 21158), (11, 21167), (12, 21191), (13, 21194), (21, 21236), (22, 21257), (25, 21284),

Gene: Delian_23 Start: 20480, Stop: 20734, Start Num: 7
Candidate Starts for Delian_23:
(Start: 6 @20474 has 2 MA's), (Start: 7 @20480 has 38 MA's), (12, 20555), (20, 20597), (23, 20627), (25, 20642), (27, 20648),

Gene: Denise_20 Start: 18160, Stop: 18429, Start Num: 5
Candidate Starts for Denise_20:
(Start: 4 @18154 has 2 MA's), (Start: 5 @18160 has 8 MA's), (10, 18223), (11, 18232), (12, 18256), (13, 18259), (21, 18301), (22, 18322), (25, 18349),

Gene: Dorito_22 Start: 19982, Stop: 20206, Start Num: 7
Candidate Starts for Dorito_22:
(Start: 7 @19982 has 38 MA's), (12, 20054), (13, 20057), (18, 20087), (19, 20090), (25, 20141), (26, 20144), (29, 20162),

Gene: EMoore_40 Start: 38778, Stop: 39062, Start Num: 3
Candidate Starts for EMoore_40:
(Start: 2 @38739 has 2 MA's), (Start: 3 @38778 has 12 MA's), (9, 38871), (10, 38874), (14, 38919), (15, 38922), (17, 38931), (25, 38994),

Gene: Fenry_22 Start: 20178, Stop: 20432, Start Num: 7
Candidate Starts for Fenry_22:
(Start: 6 @20172 has 2 MA's), (Start: 7 @20178 has 38 MA's), (12, 20253), (20, 20295), (23, 20325), (25, 20340), (27, 20346),

Gene: Frokostdame_23 Start: 20425, Stop: 20679, Start Num: 7
Candidate Starts for Frokostdame_23:
(Start: 6 @20419 has 2 MA's), (Start: 7 @20425 has 38 MA's), (12, 20500), (20, 20542), (25, 20587), (27, 20593),

Gene: Gambino_25 Start: 20771, Stop: 21025, Start Num: 7
Candidate Starts for Gambino_25:
(Start: 6 @20765 has 2 MA's), (Start: 7 @20771 has 38 MA's), (12, 20846), (20, 20888), (25, 20933), (27, 20939),

Gene: Guacamole_23 Start: 20463, Stop: 20717, Start Num: 7
Candidate Starts for Guacamole_23:
(Start: 6 @20457 has 2 MA's), (Start: 7 @20463 has 38 MA's), (12, 20538), (20, 20580), (23, 20610), (25, 20625), (27, 20631),

Gene: Hans_44 Start: 38244, Stop: 38522, Start Num: 3
Candidate Starts for Hans_44:
(Start: 2 @38205 has 2 MA's), (Start: 3 @38244 has 12 MA's), (9, 38334), (14, 38379), (15, 38382), (19, 38403), (25, 38454),

Gene: Hitter_23 Start: 20459, Stop: 20713, Start Num: 7
Candidate Starts for Hitter_23:
(Start: 6 @20453 has 2 MA's), (Start: 7 @20459 has 38 MA's), (12, 20534), (20, 20576), (23, 20606), (25, 20621), (27, 20627),

Gene: InLimbo_23 Start: 18738, Stop: 18995, Start Num: 7
Candidate Starts for InLimbo_23:
(Start: 6 @18732 has 2 MA's), (Start: 7 @18738 has 38 MA's), (13, 18819), (20, 18858), (24, 18891), (25, 18903), (27, 18909),

Gene: Inspectinfecti_43 Start: 38690, Stop: 38968, Start Num: 3
Candidate Starts for Inspectinfecti_43:
(Start: 2 @38651 has 2 MA's), (Start: 3 @38690 has 12 MA's), (9, 38780), (14, 38825), (15, 38828), (19, 38849), (25, 38900),

Gene: Invectra_23 Start: 20847, Stop: 21071, Start Num: 7
Candidate Starts for Invectra_23:

(Start: 7 @20847 has 38 MA's), (12, 20919), (13, 20922), (18, 20952), (19, 20955), (25, 21006), (26, 21009), (29, 21027),

Gene: Jablanski_26 Start: 22153, Stop: 22443, Start Num: 5
Candidate Starts for Jablanski_26:
(Start: 4 @22147 has 2 MA's), (Start: 5 @22153 has 8 MA's), (11, 22246), (12, 22270), (13, 22273), (21, 22315), (22, 22336), (25, 22363),

Gene: Jalammah_25 Start: 21253, Stop: 21507, Start Num: 7
Candidate Starts for Jalammah_25:
(Start: 6 @21247 has 2 MA's), (Start: 7 @21253 has 38 MA's), (12, 21328), (20, 21370), (23, 21400), (25, 21415), (27, 21421),

Gene: JasperJr_23 Start: 20463, Stop: 20717, Start Num: 7
Candidate Starts for JasperJr_23:
(Start: 6 @20457 has 2 MA's), (Start: 7 @20463 has 38 MA's), (12, 20538), (20, 20580), (23, 20610), (25, 20625), (27, 20631),

Gene: Keitabear_43 Start: 39890, Stop: 40219, Start Num: 2
Candidate Starts for Keitabear_43:
(Start: 2 @39890 has 2 MA's), (Start: 3 @39929 has 12 MA's), (10, 40031), (14, 40076), (15, 40079), (17, 40088), (25, 40151),

Gene: Kiko_25 Start: 20678, Stop: 20956, Start Num: 4
Candidate Starts for Kiko_25:
(Start: 4 @20678 has 2 MA's), (Start: 5 @20684 has 8 MA's), (11, 20765), (16, 20810), (25, 20879), (27, 20885),

Gene: Leonard_42 Start: 38329, Stop: 38607, Start Num: 3
Candidate Starts for Leonard_42:
(Start: 2 @38290 has 2 MA's), (Start: 3 @38329 has 12 MA's), (9, 38419), (14, 38464), (15, 38467), (19, 38488), (25, 38539),

Gene: Lysidious_24 Start: 20983, Stop: 21237, Start Num: 7
Candidate Starts for Lysidious_24:
(Start: 6 @20977 has 2 MA's), (Start: 7 @20983 has 38 MA's), (12, 21058), (20, 21100), (23, 21130), (25, 21145), (27, 21151),

Gene: Malachai_24 Start: 20940, Stop: 21194, Start Num: 7
Candidate Starts for Malachai_24:
(Start: 6 @20934 has 2 MA's), (Start: 7 @20940 has 38 MA's), (12, 21015), (20, 21057), (23, 21087), (25, 21102), (27, 21108),

Gene: Malibo_25 Start: 20695, Stop: 20922, Start Num: 7
Candidate Starts for Malibo_25:
(Start: 7 @20695 has 38 MA's), (12, 20764), (24, 20839), (25, 20851), (27, 20857),

Gene: MelBins_43 Start: 38476, Stop: 38754, Start Num: 3
Candidate Starts for MelBins_43:
(Start: 2 @38437 has 2 MA's), (Start: 3 @38476 has 12 MA's), (9, 38566), (14, 38611), (15, 38614), (19, 38635), (25, 38686),

Gene: Melba_23 Start: 20459, Stop: 20713, Start Num: 7

Candidate Starts for Melba_23:
(Start: 6 @20453 has 2 MA's), (Start: 7 @20459 has 38 MA's), (12, 20534), (20, 20576), (23, 20606), (25, 20621), (27, 20627),

Gene: Mellie_22 Start: 20220, Stop: 20474, Start Num: 7
Candidate Starts for Mellie_22:
(Start: 6 @20214 has 2 MA's), (Start: 7 @20220 has 38 MA's), (12, 20295), (20, 20337), (23, 20367), (25, 20382), (27, 20388),

Gene: MintFen_23 Start: 20459, Stop: 20713, Start Num: 7
Candidate Starts for MintFen_23:
(Start: 6 @20453 has 2 MA's), (Start: 7 @20459 has 38 MA's), (12, 20534), (20, 20576), (23, 20606), (25, 20621), (27, 20627),

Gene: MissRona_25 Start: 20771, Stop: 21025, Start Num: 7
Candidate Starts for MissRona_25:
(Start: 6 @20765 has 2 MA's), (Start: 7 @20771 has 38 MA's), (12, 20846), (20, 20888), (25, 20933), (27, 20939),

Gene: Morkie_22 Start: 18738, Stop: 18995, Start Num: 7
Candidate Starts for Morkie_22:
(Start: 6 @18732 has 2 MA's), (Start: 7 @18738 has 38 MA's), (13, 18819), (20, 18858), (24, 18891), (25, 18903), (27, 18909),

Gene: Murp_24 Start: 20727, Stop: 20981, Start Num: 7
Candidate Starts for Murp_24:
(Start: 6 @20721 has 2 MA's), (Start: 7 @20727 has 38 MA's), (8, 20766), (12, 20802), (20, 20844), (23, 20874), (25, 20889), (27, 20895),

Gene: ODay_30 Start: 22645, Stop: 22920, Start Num: 4
Candidate Starts for ODay_30:
(Start: 4 @22645 has 2 MA's), (Start: 5 @22651 has 8 MA's), (10, 22714), (11, 22723), (12, 22747), (13, 22750), (21, 22792), (22, 22813), (25, 22840), (26, 22843),

Gene: Phauci_35 Start: 35179, Stop: 35457, Start Num: 3
Candidate Starts for Phauci_35:
(Start: 2 @35140 has 2 MA's), (Start: 3 @35179 has 12 MA's), (9, 35269), (14, 35314), (15, 35317), (19, 35338), (25, 35389),

Gene: Phinally_42 Start: 38326, Stop: 38604, Start Num: 3
Candidate Starts for Phinally_42:
(Start: 2 @38287 has 2 MA's), (Start: 3 @38326 has 12 MA's), (9, 38416), (14, 38461), (15, 38464), (19, 38485), (25, 38536),

Gene: PhorbesPhlower_22 Start: 18738, Stop: 18995, Start Num: 7
Candidate Starts for PhorbesPhlower_22:
(Start: 6 @18732 has 2 MA's), (Start: 7 @18738 has 38 MA's), (13, 18819), (20, 18858), (24, 18891), (25, 18903), (27, 18909),

Gene: PhriskyACE_22 Start: 19982, Stop: 20206, Start Num: 7
Candidate Starts for PhriskyACE_22:
(Start: 7 @19982 has 38 MA's), (12, 20054), (13, 20057), (18, 20087), (19, 20090), (25, 20141), (26, 20144), (29, 20162),

Gene: PhrostedPhlake_25 Start: 21152, Stop: 21406, Start Num: 7
Candidate Starts for PhrostedPhlake_25:
(Start: 6 @21146 has 2 MA's), (Start: 7 @21152 has 38 MA's), (12, 21227), (20, 21269), (23, 21299), (25, 21314), (27, 21320),

Gene: Pipp_23 Start: 20447, Stop: 20707, Start Num: 6
Candidate Starts for Pipp_23:
(Start: 6 @20447 has 2 MA's), (Start: 7 @20453 has 38 MA's), (12, 20528), (20, 20570), (23, 20600), (25, 20615), (27, 20621),

Gene: Posh_26 Start: 22006, Stop: 22296, Start Num: 5
Candidate Starts for Posh_26:
(Start: 4 @22000 has 2 MA's), (Start: 5 @22006 has 8 MA's), (11, 22099), (12, 22123), (13, 22126), (21, 22168), (22, 22189), (25, 22216),

Gene: Pytheas_26 Start: 22152, Stop: 22442, Start Num: 5
Candidate Starts for Pytheas_26:
(Start: 4 @22146 has 2 MA's), (Start: 5 @22152 has 8 MA's), (11, 22245), (12, 22269), (13, 22272), (21, 22314), (22, 22335), (25, 22362),

Gene: RiverRaider_44 Start: 37811, Stop: 38137, Start Num: 2
Candidate Starts for RiverRaider_44:
(Start: 2 @37811 has 2 MA's), (Start: 3 @37850 has 12 MA's), (9, 37946), (15, 37997), (19, 38018), (25, 38069), (28, 38078),

Gene: Samba_23 Start: 20537, Stop: 20791, Start Num: 7
Candidate Starts for Samba_23:
(Start: 6 @20531 has 2 MA's), (Start: 7 @20537 has 38 MA's), (12, 20612), (20, 20654), (23, 20684), (25, 20699), (27, 20705),

Gene: Sedona_43 Start: 39665, Stop: 39955, Start Num: 3
Candidate Starts for Sedona_43:
(Start: 2 @39626 has 2 MA's), (Start: 3 @39665 has 12 MA's), (10, 39767), (14, 39812), (15, 39815), (17, 39824), (25, 39887),

Gene: Tuti_23 Start: 20869, Stop: 21093, Start Num: 7
Candidate Starts for Tuti_23:
(Start: 7 @20869 has 38 MA's), (12, 20941), (13, 20944), (18, 20974), (19, 20977), (25, 21028), (26, 21031), (29, 21049),

Gene: UmaThurman_23 Start: 20584, Stop: 20838, Start Num: 7
Candidate Starts for UmaThurman_23:
(Start: 6 @20578 has 2 MA's), (Start: 7 @20584 has 38 MA's), (12, 20659), (20, 20701), (23, 20731), (25, 20746), (27, 20752),

Gene: Utz_23 Start: 20454, Stop: 20708, Start Num: 7
Candidate Starts for Utz_23:
(Start: 6 @20448 has 2 MA's), (Start: 7 @20454 has 38 MA's), (12, 20529), (20, 20571), (23, 20601), (25, 20616), (27, 20622),

Gene: Walrus_25 Start: 20999, Stop: 21253, Start Num: 7
Candidate Starts for Walrus_25:

(Start: 6 @20993 has 2 MA's), (Start: 7 @20999 has 38 MA's), (12, 21074), (20, 21116), (23, 21146), (25, 21161), (27, 21167),

Gene: Wisp_22 Start: 20163, Stop: 20423, Start Num: 6
Candidate Starts for Wisp_22:
(Start: 6 @20163 has 2 MA's), (Start: 7 @20169 has 38 MA's), (12, 20244), (20, 20286), (23, 20316), (25, 20331), (27, 20337),

Gene: Wrigley_26 Start: 21903, Stop: 22193, Start Num: 5
Candidate Starts for Wrigley_26:
(Start: 4 @21897 has 2 MA's), (Start: 5 @21903 has 8 MA's), (11, 21996), (12, 22020), (13, 22023), (21, 22065), (22, 22086), (25, 22113),

Gene: Zarbodnamra_23 Start: 20458, Stop: 20712, Start Num: 7
Candidate Starts for Zarbodnamra_23:
(Start: 6 @20452 has 2 MA's), (Start: 7 @20458 has 38 MA's), (12, 20533), (20, 20575), (23, 20605), (25, 20620), (27, 20626),

Gene: Zilla_23 Start: 20476, Stop: 20730, Start Num: 7
Candidate Starts for Zilla_23:
(Start: 6 @20470 has 2 MA's), (Start: 7 @20476 has 38 MA's), (12, 20551), (20, 20593), (23, 20623), (25, 20638), (27, 20644),