Pham 289267

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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 289267 Report

This analysis was run 03/28/26 on database version 641.

Pham number 289267 has 97 members, 30 are drafts.

Phages represented in each track:
• Track 1 : Imvubu_87
• Track 2 : Indlovu_82
• Track 3 : LilMcDreamy_81
• Track 4 : Zenteno07_96
• Track 5 : BirdsNest_96
• Track 6 : Hashim76_93
• Track 7 : ChrisnMich_86
• Track 8 : VioletZ_87, Fortunato_83, Hydro_85, JoyceMaria_84, Hangman_85, Waleliano_84, Lolalove_86, Zemanar_84, Mudslide_85, Frederick_86, Mithril_84, RawrgerThat_84, BrownCNA_86
• Track 9 : Vincenzo_85, AlanGrant_86
• Track 10 : LittleDigger_83, Lambano_81, Nanao_83, Poster_82, Renkei_83, Epah_83, Hally898_81, Antihero_83, Ahwei_83
• Track 11 : Nigel_81
• Track 12 : Stinger_83
• Track 13 : Apex_86, Prince_84
• Track 14 : Cooper_86
• Track 15 : Xincheng_78, JaguarMi_79
• Track 16 : QueenPie_78
• Track 17 : BobbyK_85, JAMaL_84
• Track 18 : Magpie_81, Fanaw_80
• Track 19 : Austelle_85
• Track 20 : GinPorsche_85
• Track 21 : Mysterious_82
• Track 22 : Rich_81
• Track 23 : Reccee_84, Donny_83
• Track 24 : DigitDog_85, Serendipitous_83, Nangang_84, Shenyu_84
• Track 25 : SirJeffery_81
• Track 26 : Suigeneris_84
• Track 27 : KarasumaRum_81, StinkyVeggy_81
• Track 28 : Phelemich_80
• Track 29 : Nehemiah_82
• Track 30 : Reprobate_82
• Track 31 : Rita130_82, Acadian_83
• Track 32 : EastView9101_82
• Track 33 : Baee_82
• Track 34 : Jolie1_084

• Track 35 : 39HC_087, 40BC_087
• Track 36 : Hosp_082
• Track 37 : Saguaro_78
• Track 38 : Knocker_83
• Track 39 : Funsized_84
• Track 40 : Quesadilla_83
• Track 41 : Rinkes_81
• Track 42 : PenguinLover67_82
• Track 43 : CRB2_82
• Track 44 : GrootJr_11, NovumRegina_9, Arti_9, Wheezy_9
• Track 45 : Commandaria_8
• Track 46 : RedRaider_12
• Track 47 : Ennea_12
• Track 48 : Lollipop1437_11
• Track 49 : Sukkupi_7, BiPauneto_7, Yndexa_7
• Track 50 : WhoseManz_7
• Track 51 : Pemberton_7
• Track 52 : NadineRae_7, HubbaBubba_7, IDyn_8, Marietta_7
• Track 53 : Fury_11, Pleakley_11
• Track 54 : HomeFry_10
• Track 55 : Scuba_11
• Track 56 : Vitas_27

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

The start number called the most often in the published annotations is 47, it was called in 18 of the 67 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Ahwei_83, Antihero_83, Apex_86, Austelle_85, BrownCNA_86, ChrisnMich_86, Cooper_86, Epah_83, Fanaw_80, Fortunato_83, Frederick_86, Hally898_81, Hangman_85, Hydro_85, JaguarMi_79, JoyceMaria_84, Lambano_81, LittleDigger_83, Lolalove_86, Magpie_81, Mithril_84, Mudslide_85, Nanao_83, Poster_82, Prince_84, QueenPie_78, RawrgerThat_84, Renkei_83, VioletZ_87, Waleliano_84, Xincheng_78, Zemanar_84,

Genes that have the "Most Annotated" start but do not call it:
• AlanGrant_86, BobbyK_85, GinPorsche_85, JAMaL_84, Nigel_81, Stinger_83, Vincenzo_85,

Genes that do not have the "Most Annotated" start:
• 39HC_087, 40BC_087, Acadian_83, Arti_9, Baee_82, BiPauneto_7, BirdsNest_96, CRB2_82, Commandaria_8, DigitDog_85, Donny_83, EastView9101_82, Ennea_12, Funsized_84, Fury_11, GrootJr_11, Hashim76_93, HomeFry_10, Hosp_082, HubbaBubba_7, IDyn_8, Imvubu_87, Indlovu_82, Jolie1_084, KarasumaRum_81, Knocker_83, LilMcDreamy_81, Lollipop1437_11, Marietta_7, Mysterious_82, NadineRae_7, Nangang_84, Nehemiah_82, NovumRegina_9, Pemberton_7, PenguinLover67_82, Phelemich_80, Pleakley_11, Quesadilla_83, Reccee_84, RedRaider_12, Reprobate_82, Rich_81, Rinkes_81, Rita130_82, Saguaro_78, Scuba_11, Serendipitous_83, Shenyu_84, SirJeffery_81, StinkyVeggy_81,

Suigeneris_84, Sukkupi_7, Vitas_27, Wheezy_9, WhoseManz_7, Yndexa_7, Zenteno07_96,

Summary by start number:

Start 33:
• Found in 15 of 97 (15.5%) of genes in pham
• Manual Annotations of this start: 4 of 67
• Called 26.7% of time when present
• Phage (with cluster) where this start called: BobbyK_85 (B4), JAMaL_84 (B4), Nigel_81 (B4), Stinger_83 (B4),

Start 34:
• Found in 1 of 97 (1.0%) 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: Vitas_27 (EB),

Start 35:
• Found in 3 of 97 (3.1%) of genes in pham
• Manual Annotations of this start: 2 of 67
• Called 66.7% of time when present
• Phage (with cluster) where this start called: AlanGrant_86 (B4), Vincenzo_85 (B4),

Start 36:
• Found in 13 of 97 (13.4%) of genes in pham
• No Manual Annotations of this start.
• Called 7.7% of time when present
• Phage (with cluster) where this start called: Nehemiah_82 (B5),

Start 37:
• Found in 16 of 97 (16.5%) of genes in pham
• Manual Annotations of this start: 4 of 67
• Called 56.2% of time when present
• Phage (with cluster) where this start called: DigitDog_85 (B5), Indlovu_82 (B11), KarasumaRum_81 (B5), LilMcDreamy_81 (B12), Nangang_84 (B5), Saguaro_78 (B7), Serendipitous_83 (B5), Shenyu_84 (B5), StinkyVeggy_81 (B5),

Start 38:
• Found in 13 of 97 (13.4%) of genes in pham
• Manual Annotations of this start: 5 of 67
• Called 38.5% of time when present
• Phage (with cluster) where this start called: Baee_82 (B5), EastView9101_82 (B5), Mysterious_82 (B5), Reprobate_82 (B5), Rich_81 (B5),

Start 40:
• Found in 2 of 97 (2.1%) 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: CRB2_82 (B9), PenguinLover67_82 (B9),

Start 41:

- Found in 4 of 97 (4.1%) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Quesadilla_83 (B9),

Start 43:
- Found in 3 of 97 (3.1%) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Lollipop1437_11 (CR3),

Start 44:
- Found in 29 of 97 (29.9%) of genes in pham
- Manual Annotations of this start: 8 of 67
- Called 51.7% of time when present
- Phage (with cluster) where this start called: 39HC_087 (B6), 40BC_087 (B6), Acadian_83 (B5), Donny_83 (B5), Funsized_84 (B9), Hosp_082 (B6), Imvubu_87 (B10), Jolie1_084 (B6), Knocker_83 (B9), Phelemich_80 (B5), Reccee_84 (B5), Rinkes_81 (B9), Rita130_82 (B5), SirJeffery_81 (B5), Suigeneris_84 (B5),

Start 47:
- Found in 39 of 97 (40.2%) of genes in pham
- Manual Annotations of this start: 18 of 67
- Called 82.1% of time when present
- Phage (with cluster) where this start called: Ahwei_83 (B4), Antihero_83 (B4), Apex_86 (B4), Austelle_85 (B4), BrownCNA_86 (B4), ChrisnMich_86 (B4), Cooper_86 (B4), Epah_83 (B4), Fanaw_80 (B4), Fortunato_83 (B4), Frederick_86 (B4), Hally898_81 (B4), Hangman_85 (B4), Hydro_85 (B4), JaguarMi_79 (B4), JoyceMaria_84 (B4), Lambano_81 (B4), LittleDigger_83 (B4), Lolalove_86 (B4), Magpie_81 (B4), Mithril_84 (B4), Mudslide_85 (B4), Nanao_83 (B4), Poster_82 (B4), Prince_84 (B4), QueenPie_78 (B4), RawrgerThat_84 (B4), Renkei_83 (B4), VioletZ_87 (B4), Waleliano_84 (B4), Xincheng_78 (B4), Zemanar_84 (B4),

Start 48:
- Found in 4 of 97 (4.1%) 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: Fury_11 (CR5), HomeFry_10 (CR5), Pleakley_11 (CR5), Scuba_11 (CR5),

Start 49:
- Found in 13 of 97 (13.4%) of genes in pham
- Manual Annotations of this start: 12 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arti_9 (CR2), BiPauneto_7 (CR4), GrootJr_11 (CR2), HubbaBubba_7 (CR4), IDyn_8 (CR4), Marietta_7 (CR4), NadineRae_7 (CR4), NovumRegina_9 (CR2), Pemberton_7 (CR4), Sukkupi_7 (CR4), Wheezy_9 (CR2), WhoseManz_7 (CR4), Yndexa_7 (CR4),

Start 50:
- Found in 3 of 97 (3.1%) of genes in pham
- Manual Annotations of this start: 3 of 67
- Called 100.0% of time when present

• Phage (with cluster) where this start called: BirdsNest_96 (B13), Hashim76_93 (B13), Zenteno07_96 (B13),

Start 51:
• Found in 1 of 97 (1.0%) 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: Commandaria_8 (CR2),

Start 53:
• Found in 3 of 97 (3.1%) of genes in pham
• Manual Annotations of this start: 2 of 67
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Ennea_12 (CR3), RedRaider_12 (CR3),

Start 56:
• Found in 40 of 97 (41.2%) of genes in pham
• Manual Annotations of this start: 1 of 67
• Called 2.5% of time when present
• Phage (with cluster) where this start called: GinPorsche_85 (B4),

Summary by clusters:

There are 14 clusters represented in this pham: CR2, CR3, CR4, CR5, EB, B4, B5, B6, B7, B12, B13, B10, B11, B9,

Info for manual annotations of cluster B10:
•Start number 44 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:
•Start number 37 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:
•Start number 37 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B13:
•Start number 50 was manually annotated 3 times for cluster B13.

Info for manual annotations of cluster B4:
•Start number 33 was manually annotated 4 times for cluster B4.
•Start number 35 was manually annotated 2 times for cluster B4.
•Start number 47 was manually annotated 18 times for cluster B4.
•Start number 56 was manually annotated 1 time for cluster B4.

Info for manual annotations of cluster B5:
•Start number 37 was manually annotated 1 time for cluster B5.
•Start number 38 was manually annotated 5 times for cluster B5.
•Start number 44 was manually annotated 4 times for cluster B5.

Info for manual annotations of cluster B7:
•Start number 37 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B9:
•Start number 40 was manually annotated 2 times for cluster B9.
•Start number 41 was manually annotated 1 time for cluster B9.
•Start number 44 was manually annotated 3 times for cluster B9.

Info for manual annotations of cluster CR2:
•Start number 49 was manually annotated 4 times for cluster CR2.
•Start number 51 was manually annotated 1 time for cluster CR2.

Info for manual annotations of cluster CR3:
•Start number 43 was manually annotated 1 time for cluster CR3.
•Start number 53 was manually annotated 2 times for cluster CR3.

Info for manual annotations of cluster CR4:
•Start number 49 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:
•Start number 48 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster EB:
•Start number 34 was manually annotated 1 time for cluster EB.

Gene Information:
Gene: 39HC_087 Start: 65341, Stop: 65051, Start Num: 44
Candidate Starts for 39HC_087:
(24, 65503), (29, 65443), (Start: 44 @65341 has 8 MA's), (68, 65233), (73, 65179),

Gene: 40BC_087 Start: 65341, Stop: 65051, Start Num: 44
Candidate Starts for 40BC_087:
(24, 65503), (29, 65443), (Start: 44 @65341 has 8 MA's), (68, 65233), (73, 65179),

Gene: Acadian_83 Start: 63798, Stop: 63526, Start Num: 44
Candidate Starts for Acadian_83:
(31, 63873), (32, 63846), (Start: 44 @63798 has 8 MA's), (70, 63657),

Gene: Ahwei_83 Start: 64624, Stop: 64340, Start Num: 47
Candidate Starts for Ahwei_83:
(Start: 33 @64666 has 4 MA's), (Start: 47 @64624 has 18 MA's), (Start: 56 @64588 has 1 MA's), (63, 64531), (64, 64522), (66, 64513), (67, 64501), (70, 64474), (72, 64459),

Gene: AlanGrant_86 Start: 66429, Stop: 66130, Start Num: 35
Candidate Starts for AlanGrant_86:
(7, 66777), (13, 66699), (Start: 35 @66429 has 2 MA's), (Start: 47 @66393 has 18 MA's), (52, 66387), (70, 66264), (74, 66243), (77, 66234), (79, 66204),

Gene: Antihero_83 Start: 64547, Stop: 64263, Start Num: 47
Candidate Starts for Antihero_83:
(Start: 33 @64589 has 4 MA's), (Start: 47 @64547 has 18 MA's), (Start: 56 @64511 has 1 MA's), (63, 64454), (64, 64445), (66, 64436), (67, 64424), (70, 64397), (72, 64382),

Gene: Apex_86 Start: 65693, Stop: 65415, Start Num: 47
Candidate Starts for Apex_86:
(Start: 47 @65693 has 18 MA's), (Start: 56 @65663 has 1 MA's), (63, 65606), (64, 65597), (67, 65576), (70, 65549),

Gene: Arti_9 Start: 5743, Stop: 5994, Start Num: 49
Candidate Starts for Arti_9:
(26, 5623), (27, 5626), (Start: 49 @5743 has 12 MA's), (58, 5791), (74, 5905), (78, 5920), (82, 5980),

Gene: Austelle_85 Start: 66243, Stop: 65959, Start Num: 47
Candidate Starts for Austelle_85:
(Start: 33 @66285 has 4 MA's), (Start: 47 @66243 has 18 MA's), (Start: 56 @66207 has 1 MA's), (63, 66150), (64, 66141), (65, 66138), (66, 66132), (67, 66120), (71, 66087), (72, 66078),

Gene: Baee_82 Start: 64440, Stop: 64162, Start Num: 38
Candidate Starts for Baee_82:
(30, 64512), (36, 64446), (Start: 37 @64443 has 4 MA's), (Start: 38 @64440 has 5 MA's), (Start: 44 @64434 has 8 MA's),

Gene: BiPauneto_7 Start: 3671, Stop: 3916, Start Num: 49
Candidate Starts for BiPauneto_7:
(8, 3311), (46, 3668), (Start: 49 @3671 has 12 MA's), (61, 3737), (67, 3773), (69, 3779), (70, 3809), (77, 3839), (81, 3899), (82, 3905),

Gene: BirdsNest_96 Start: 67441, Stop: 67193, Start Num: 50
Candidate Starts for BirdsNest_96:
(Start: 50 @67441 has 3 MA's), (Start: 56 @67423 has 1 MA's), (67, 67339), (73, 67285),

Gene: BobbyK_85 Start: 65257, Stop: 64931, Start Num: 33
Candidate Starts for BobbyK_85:
(Start: 33 @65257 has 4 MA's), (Start: 47 @65215 has 18 MA's), (Start: 56 @65179 has 1 MA's), (63, 65122), (64, 65113), (66, 65104), (67, 65092), (70, 65065), (72, 65050),

Gene: BrownCNA_86 Start: 65641, Stop: 65363, Start Num: 47
Candidate Starts for BrownCNA_86:
(Start: 47 @65641 has 18 MA's), (Start: 56 @65611 has 1 MA's), (60, 65566), (63, 65554), (64, 65545), (67, 65524), (70, 65497),

Gene: CRB2_82 Start: 65913, Stop: 65626, Start Num: 40
Candidate Starts for CRB2_82:
(Start: 40 @65913 has 2 MA's), (Start: 56 @65877 has 1 MA's), (70, 65757), (79, 65697),

Gene: ChrisnMich_86 Start: 64491, Stop: 64228, Start Num: 47
Candidate Starts for ChrisnMich_86:
(Start: 47 @64491 has 18 MA's), (64, 64410), (66, 64401), (70, 64362), (72, 64347), (76, 64335),

Gene: Commandaria_8 Start: 4772, Stop: 5020, Start Num: 51
Candidate Starts for Commandaria_8:
(13, 4496), (15, 4535), (26, 4649), (Start: 51 @4772 has 1 MA's), (70, 4913), (82, 5009),

Gene: Cooper_86 Start: 64991, Stop: 64728, Start Num: 47
Candidate Starts for Cooper_86:

(21, 65192), (Start: 47 @64991 has 18 MA's), (64, 64910), (66, 64901), (70, 64862), (72, 64847), (76, 64835),

Gene: DigitDog_85 Start: 64306, Stop: 64025, Start Num: 37
Candidate Starts for DigitDog_85:
(36, 64309), (Start: 37 @64306 has 4 MA's), (Start: 38 @64303 has 5 MA's), (Start: 44 @64297 has 8 MA's),

Gene: Donny_83 Start: 63632, Stop: 63360, Start Num: 44
Candidate Starts for Donny_83:
(32, 63680), (Start: 44 @63632 has 8 MA's),

Gene: EastView9101_82 Start: 63548, Stop: 63270, Start Num: 38
Candidate Starts for EastView9101_82:
(36, 63554), (Start: 37 @63551 has 4 MA's), (Start: 38 @63548 has 5 MA's), (Start: 44 @63542 has 8 MA's), (70, 63401),

Gene: Ennea_12 Start: 6510, Stop: 6764, Start Num: 53
Candidate Starts for Ennea_12:
(20, 6291), (Start: 43 @6489 has 1 MA's), (45, 6492), (Start: 53 @6510 has 2 MA's), (67, 6624), (80, 6726), (82, 6753),

Gene: Epah_83 Start: 64547, Stop: 64263, Start Num: 47
Candidate Starts for Epah_83:
(Start: 33 @64589 has 4 MA's), (Start: 47 @64547 has 18 MA's), (Start: 56 @64511 has 1 MA's), (63, 64454), (64, 64445), (66, 64436), (67, 64424), (70, 64397), (72, 64382),

Gene: Fanaw_80 Start: 65228, Stop: 64950, Start Num: 47
Candidate Starts for Fanaw_80:
(Start: 47 @65228 has 18 MA's), (60, 65153), (63, 65141), (64, 65132), (67, 65111), (70, 65084),

Gene: Fortunato_83 Start: 65020, Stop: 64742, Start Num: 47
Candidate Starts for Fortunato_83:
(Start: 47 @65020 has 18 MA's), (Start: 56 @64990 has 1 MA's), (60, 64945), (63, 64933), (64, 64924), (67, 64903), (70, 64876),

Gene: Frederick_86 Start: 65507, Stop: 65229, Start Num: 47
Candidate Starts for Frederick_86:
(Start: 47 @65507 has 18 MA's), (Start: 56 @65477 has 1 MA's), (60, 65432), (63, 65420), (64, 65411), (67, 65390), (70, 65363),

Gene: Funsized_84 Start: 66820, Stop: 66524, Start Num: 44
Candidate Starts for Funsized_84:
(17, 67057), (18, 67048), (19, 67045), (27, 66949), (Start: 44 @66820 has 8 MA's), (67, 66712), (68, 66709), (70, 66676),

Gene: Fury_11 Start: 5184, Stop: 5441, Start Num: 48
Candidate Starts for Fury_11:
(23, 5022), (25, 5070), (28, 5091), (Start: 48 @5184 has 2 MA's), (54, 5193), (75, 5355), (82, 5427),

Gene: GinPorsche_85 Start: 64508, Stop: 64260, Start Num: 56
Candidate Starts for GinPorsche_85:

(Start: 33 @64586 has 4 MA's), (Start: 47 @64544 has 18 MA's), (Start: 56 @64508 has 1 MA's), (63, 64451), (64, 64442), (66, 64433), (67, 64421), (70, 64394), (72, 64379),

Gene: GrootJr_11 Start: 6138, Stop: 6389, Start Num: 49
Candidate Starts for GrootJr_11:
(26, 6018), (27, 6021), (Start: 49 @6138 has 12 MA's), (58, 6186), (74, 6300), (78, 6315), (82, 6375),

Gene: Hally898_81 Start: 64384, Stop: 64100, Start Num: 47
Candidate Starts for Hally898_81:
(Start: 33 @64426 has 4 MA's), (Start: 47 @64384 has 18 MA's), (Start: 56 @64348 has 1 MA's), (63, 64291), (64, 64282), (66, 64273), (67, 64261), (70, 64234), (72, 64219),

Gene: Hangman_85 Start: 65719, Stop: 65441, Start Num: 47
Candidate Starts for Hangman_85:
(Start: 47 @65719 has 18 MA's), (Start: 56 @65689 has 1 MA's), (60, 65644), (63, 65632), (64, 65623), (67, 65602), (70, 65575),

Gene: Hashim76_93 Start: 66930, Stop: 66682, Start Num: 50
Candidate Starts for Hashim76_93:
(Start: 50 @66930 has 3 MA's), (Start: 56 @66912 has 1 MA's), (73, 66774),

Gene: HomeFry_10 Start: 4695, Stop: 4946, Start Num: 48
Candidate Starts for HomeFry_10:
(Start: 48 @4695 has 2 MA's), (82, 4932),

Gene: Hosp_082 Start: 62629, Stop: 62333, Start Num: 44
Candidate Starts for Hosp_082:
(24, 62791), (29, 62731), (Start: 44 @62629 has 8 MA's), (64, 62545), (73, 62467),

Gene: HubbaBubba_7 Start: 3528, Stop: 3773, Start Num: 49
Candidate Starts for HubbaBubba_7:
(46, 3525), (Start: 49 @3528 has 12 MA's), (61, 3594), (67, 3630), (69, 3636), (70, 3666), (77, 3696), (78, 3702), (82, 3762),

Gene: Hydro_85 Start: 65594, Stop: 65316, Start Num: 47
Candidate Starts for Hydro_85:
(Start: 47 @65594 has 18 MA's), (Start: 56 @65564 has 1 MA's), (60, 65519), (63, 65507), (64, 65498), (67, 65477), (70, 65450),

Gene: IDyn_8 Start: 4449, Stop: 4694, Start Num: 49
Candidate Starts for IDyn_8:
(46, 4446), (Start: 49 @4449 has 12 MA's), (61, 4515), (67, 4551), (69, 4557), (70, 4587), (77, 4617), (78, 4623), (82, 4683),

Gene: Imvubu_87 Start: 64765, Stop: 64490, Start Num: 44
Candidate Starts for Imvubu_87:
(4, 65203), (9, 65092), (10, 65053), (11, 65047), (14, 65023), (16, 64999), (22, 64945), (Start: 35 @64783 has 2 MA's), (Start: 44 @64765 has 8 MA's),

Gene: Indlovu_82 Start: 65227, Stop: 64946, Start Num: 37
Candidate Starts for Indlovu_82:
(Start: 37 @65227 has 4 MA's), (68, 65110),

Gene: JAMaL_84 Start: 65126, Stop: 64800, Start Num: 33
Candidate Starts for JAMaL_84:
(Start: 33 @65126 has 4 MA's), (Start: 47 @65084 has 18 MA's), (Start: 56 @65048 has 1 MA's), (63, 64991), (64, 64982), (66, 64973), (67, 64961), (70, 64934), (72, 64919),

Gene: JaguarMi_79 Start: 65587, Stop: 65303, Start Num: 47
Candidate Starts for JaguarMi_79:
(Start: 47 @65587 has 18 MA's), (Start: 56 @65551 has 1 MA's), (64, 65485), (66, 65476), (67, 65464), (71, 65431), (77, 65407),

Gene: Jolie1_084 Start: 64656, Stop: 64360, Start Num: 44
Candidate Starts for Jolie1_084:
(24, 64818), (29, 64758), (Start: 44 @64656 has 8 MA's), (64, 64572), (68, 64548), (73, 64494),

Gene: JoyceMaria_84 Start: 65545, Stop: 65267, Start Num: 47
Candidate Starts for JoyceMaria_84:
(Start: 47 @65545 has 18 MA's), (Start: 56 @65515 has 1 MA's), (60, 65470), (63, 65458), (64, 65449), (67, 65428), (70, 65401),

Gene: KarasumaRum_81 Start: 63704, Stop: 63423, Start Num: 37
Candidate Starts for KarasumaRum_81:
(36, 63707), (Start: 37 @63704 has 4 MA's), (Start: 38 @63701 has 5 MA's), (Start: 41 @63698 has 1 MA's), (Start: 44 @63695 has 8 MA's),

Gene: Knocker_83 Start: 65702, Stop: 65406, Start Num: 44
Candidate Starts for Knocker_83:
(17, 65939), (18, 65930), (Start: 44 @65702 has 8 MA's), (60, 65636), (62, 65627), (67, 65594), (70, 65558),

Gene: Lambano_81 Start: 64384, Stop: 64100, Start Num: 47
Candidate Starts for Lambano_81:
(Start: 33 @64426 has 4 MA's), (Start: 47 @64384 has 18 MA's), (Start: 56 @64348 has 1 MA's), (63, 64291), (64, 64282), (66, 64273), (67, 64261), (70, 64234), (72, 64219),

Gene: LilMcDreamy_81 Start: 63946, Stop: 63668, Start Num: 37
Candidate Starts for LilMcDreamy_81:
(Start: 37 @63946 has 4 MA's), (Start: 44 @63940 has 8 MA's),

Gene: LittleDigger_83 Start: 64484, Stop: 64200, Start Num: 47
Candidate Starts for LittleDigger_83:
(Start: 33 @64526 has 4 MA's), (Start: 47 @64484 has 18 MA's), (Start: 56 @64448 has 1 MA's), (63, 64391), (64, 64382), (66, 64373), (67, 64361), (70, 64334), (72, 64319),

Gene: Lolalove_86 Start: 65538, Stop: 65260, Start Num: 47
Candidate Starts for Lolalove_86:
(Start: 47 @65538 has 18 MA's), (Start: 56 @65508 has 1 MA's), (60, 65463), (63, 65451), (64, 65442), (67, 65421), (70, 65394),

Gene: Lollipop1437_11 Start: 6477, Stop: 6752, Start Num: 43
Candidate Starts for Lollipop1437_11:
(20, 6279), (Start: 43 @6477 has 1 MA's), (45, 6480), (Start: 53 @6498 has 2 MA's), (67, 6612), (80, 6714), (82, 6741),

Gene: Magpie_81 Start: 65221, Stop: 64943, Start Num: 47
Candidate Starts for Magpie_81:
(Start: 47 @65221 has 18 MA's), (60, 65146), (63, 65134), (64, 65125), (67, 65104), (70, 65077),

Gene: Marietta_7 Start: 3861, Stop: 4106, Start Num: 49
Candidate Starts for Marietta_7:
(46, 3858), (Start: 49 @3861 has 12 MA's), (61, 3927), (67, 3963), (69, 3969), (70, 3999), (77, 4029), (78, 4035), (82, 4095),

Gene: Mithril_84 Start: 65378, Stop: 65100, Start Num: 47
Candidate Starts for Mithril_84:
(Start: 47 @65378 has 18 MA's), (Start: 56 @65348 has 1 MA's), (60, 65303), (63, 65291), (64, 65282), (67, 65261), (70, 65234),

Gene: Mudslide_85 Start: 65768, Stop: 65490, Start Num: 47
Candidate Starts for Mudslide_85:
(Start: 47 @65768 has 18 MA's), (Start: 56 @65738 has 1 MA's), (60, 65693), (63, 65681), (64, 65672), (67, 65651), (70, 65624),

Gene: Mysterious_82 Start: 63888, Stop: 63610, Start Num: 38
Candidate Starts for Mysterious_82:
(36, 63894), (Start: 37 @63891 has 4 MA's), (Start: 38 @63888 has 5 MA's), (Start: 44 @63882 has 8 MA's), (67, 63777), (70, 63741), (82, 63645),

Gene: NadineRae_7 Start: 3565, Stop: 3810, Start Num: 49
Candidate Starts for NadineRae_7:
(46, 3562), (Start: 49 @3565 has 12 MA's), (61, 3631), (67, 3667), (69, 3673), (70, 3703), (77, 3733), (78, 3739), (82, 3799),

Gene: Nanao_83 Start: 64397, Stop: 64113, Start Num: 47
Candidate Starts for Nanao_83:
(Start: 33 @64439 has 4 MA's), (Start: 47 @64397 has 18 MA's), (Start: 56 @64361 has 1 MA's), (63, 64304), (64, 64295), (66, 64286), (67, 64274), (70, 64247), (72, 64232),

Gene: Nangang_84 Start: 64289, Stop: 64008, Start Num: 37
Candidate Starts for Nangang_84:
(36, 64292), (Start: 37 @64289 has 4 MA's), (Start: 38 @64286 has 5 MA's), (Start: 44 @64280 has 8 MA's),

Gene: Nehemiah_82 Start: 63774, Stop: 63490, Start Num: 36
Candidate Starts for Nehemiah_82:
(36, 63774), (Start: 37 @63771 has 4 MA's), (Start: 38 @63768 has 5 MA's), (Start: 44 @63762 has 8 MA's), (67, 63657), (70, 63621), (82, 63525),

Gene: Nigel_81 Start: 63962, Stop: 63636, Start Num: 33
Candidate Starts for Nigel_81:
(6, 64301), (Start: 33 @63962 has 4 MA's), (Start: 47 @63920 has 18 MA's), (Start: 56 @63884 has 1 MA's), (57, 63860), (64, 63818), (66, 63809), (70, 63770), (72, 63755), (77, 63740),

Gene: NovumRegina_9 Start: 6137, Stop: 6388, Start Num: 49
Candidate Starts for NovumRegina_9:
(26, 6017), (27, 6020), (Start: 49 @6137 has 12 MA's), (58, 6185), (74, 6299), (78, 6314), (82, 6374),

Gene: Pemberton_7 Start: 3521, Stop: 3766, Start Num: 49
Candidate Starts for Pemberton_7:
(8, 3296), (46, 3518), (Start: 49 @3521 has 12 MA's), (61, 3587), (67, 3623), (69, 3629), (70, 3659), (77, 3689), (81, 3749), (82, 3755),

Gene: PenguinLover67_82 Start: 63644, Stop: 63351, Start Num: 40
Candidate Starts for PenguinLover67_82:
(Start: 40 @63644 has 2 MA's), (Start: 56 @63602 has 1 MA's), (67, 63518), (79, 63422),

Gene: Phelemich_80 Start: 63840, Stop: 63568, Start Num: 44
Candidate Starts for Phelemich_80:
(5, 64257), (30, 63918), (36, 63852), (Start: 37 @63849 has 4 MA's), (Start: 38 @63846 has 5 MA's), (Start: 44 @63840 has 8 MA's), (63, 63765), (67, 63735), (70, 63699), (82, 63603),

Gene: Pleakley_11 Start: 5184, Stop: 5441, Start Num: 48
Candidate Starts for Pleakley_11:
(23, 5022), (25, 5070), (28, 5091), (Start: 48 @5184 has 2 MA's), (54, 5193), (75, 5355), (82, 5427),

Gene: Poster_82 Start: 64398, Stop: 64114, Start Num: 47
Candidate Starts for Poster_82:
(Start: 33 @64440 has 4 MA's), (Start: 47 @64398 has 18 MA's), (Start: 56 @64362 has 1 MA's), (63, 64305), (64, 64296), (66, 64287), (67, 64275), (70, 64248), (72, 64233),

Gene: Prince_84 Start: 65635, Stop: 65357, Start Num: 47
Candidate Starts for Prince_84:
(Start: 47 @65635 has 18 MA's), (Start: 56 @65605 has 1 MA's), (63, 65548), (64, 65539), (67, 65518), (70, 65491),

Gene: QueenPie_78 Start: 64138, Stop: 63863, Start Num: 47
Candidate Starts for QueenPie_78:
(Start: 47 @64138 has 18 MA's), (Start: 56 @64111 has 1 MA's), (63, 64054), (64, 64045), (66, 64036), (70, 63997), (72, 63982),

Gene: Quesadilla_83 Start: 64272, Stop: 63979, Start Num: 41
Candidate Starts for Quesadilla_83:
(Start: 41 @64272 has 1 MA's), (Start: 56 @64230 has 1 MA's),

Gene: RawrgerThat_84 Start: 65226, Stop: 64948, Start Num: 47
Candidate Starts for RawrgerThat_84:
(Start: 47 @65226 has 18 MA's), (Start: 56 @65196 has 1 MA's), (60, 65151), (63, 65139), (64, 65130), (67, 65109), (70, 65082),

Gene: Reccee_84 Start: 64102, Stop: 63830, Start Num: 44
Candidate Starts for Reccee_84:
(32, 64150), (Start: 44 @64102 has 8 MA's),

Gene: RedRaider_12 Start: 6444, Stop: 6698, Start Num: 53
Candidate Starts for RedRaider_12:
(20, 6201), (Start: 43 @6423 has 1 MA's), (45, 6426), (Start: 53 @6444 has 2 MA's), (80, 6660), (82, 6687),

Gene: Renkei_83 Start: 64478, Stop: 64194, Start Num: 47
Candidate Starts for Renkei_83:

(Start: 33 @64520 has 4 MA's), (Start: 47 @64478 has 18 MA's), (Start: 56 @64442 has 1 MA's), (63, 64385), (64, 64376), (66, 64367), (67, 64355), (70, 64328), (72, 64313),

Gene: Reprobate_82 Start: 63851, Stop: 63573, Start Num: 38
Candidate Starts for Reprobate_82:
(5, 64262), (30, 63923), (36, 63857), (Start: 37 @63854 has 4 MA's), (Start: 38 @63851 has 5 MA's), (Start: 44 @63845 has 8 MA's), (63, 63770), (67, 63740), (70, 63704), (82, 63608),

Gene: Rich_81 Start: 64507, Stop: 64226, Start Num: 38
Candidate Starts for Rich_81:
(30, 64579), (36, 64513), (Start: 37 @64510 has 4 MA's), (Start: 38 @64507 has 5 MA's), (39, 64504), (Start: 44 @64498 has 8 MA's),

Gene: Rinkes_81 Start: 64713, Stop: 64441, Start Num: 44
Candidate Starts for Rinkes_81:
(1, 65202), (2, 65178), (3, 65169), (12, 64995), (17, 64944), (18, 64935), (Start: 44 @64713 has 8 MA's), (68, 64602),

Gene: Rita130_82 Start: 63772, Stop: 63500, Start Num: 44
Candidate Starts for Rita130_82:
(31, 63847), (32, 63820), (Start: 44 @63772 has 8 MA's), (70, 63631),

Gene: Saguaro_78 Start: 62799, Stop: 62497, Start Num: 37
Candidate Starts for Saguaro_78:
(Start: 37 @62799 has 4 MA's), (Start: 41 @62790 has 1 MA's), (Start: 56 @62754 has 1 MA's), (70, 62628),

Gene: Scuba_11 Start: 5282, Stop: 5539, Start Num: 48
Candidate Starts for Scuba_11:
(23, 5120), (25, 5168), (Start: 48 @5282 has 2 MA's), (54, 5291), (70, 5429), (75, 5453), (82, 5525),

Gene: Serendipitous_83 Start: 63637, Stop: 63356, Start Num: 37
Candidate Starts for Serendipitous_83:
(36, 63640), (Start: 37 @63637 has 4 MA's), (Start: 38 @63634 has 5 MA's), (Start: 44 @63628 has 8 MA's),

Gene: Shenyu_84 Start: 64305, Stop: 64024, Start Num: 37
Candidate Starts for Shenyu_84:
(36, 64308), (Start: 37 @64305 has 4 MA's), (Start: 38 @64302 has 5 MA's), (Start: 44 @64296 has 8 MA's),

Gene: SirJeffery_81 Start: 63582, Stop: 63310, Start Num: 44
Candidate Starts for SirJeffery_81:
(32, 63630), (Start: 44 @63582 has 8 MA's), (70, 63441),

Gene: Stinger_83 Start: 64081, Stop: 63758, Start Num: 33
Candidate Starts for Stinger_83:
(Start: 33 @64081 has 4 MA's), (Start: 47 @64039 has 18 MA's), (Start: 56 @64006 has 1 MA's), (57, 63982), (64, 63940), (66, 63931), (70, 63892), (77, 63862),

Gene: StinkyVeggy_81 Start: 63704, Stop: 63423, Start Num: 37
Candidate Starts for StinkyVeggy_81:

(36, 63707), (Start: 37 @63704 has 4 MA's), (Start: 38 @63701 has 5 MA's), (Start: 41 @63698 has 1 MA's), (Start: 44 @63695 has 8 MA's),

Gene: Suigeneris_84 Start: 64020, Stop: 63748, Start Num: 44
Candidate Starts for Suigeneris_84:
(31, 64095), (32, 64068), (Start: 44 @64020 has 8 MA's),

Gene: Sukkupi_7 Start: 3562, Stop: 3807, Start Num: 49
Candidate Starts for Sukkupi_7:
(8, 3202), (46, 3559), (Start: 49 @3562 has 12 MA's), (61, 3628), (67, 3664), (69, 3670), (70, 3700), (77, 3730), (81, 3790), (82, 3796),

Gene: Vincenzo_85 Start: 66459, Stop: 66160, Start Num: 35
Candidate Starts for Vincenzo_85:
(7, 66807), (13, 66729), (Start: 35 @66459 has 2 MA's), (Start: 47 @66423 has 18 MA's), (52, 66417), (70, 66294), (74, 66273), (77, 66264), (79, 66234),

Gene: VioletZ_87 Start: 65725, Stop: 65447, Start Num: 47
Candidate Starts for VioletZ_87:
(Start: 47 @65725 has 18 MA's), (Start: 56 @65695 has 1 MA's), (60, 65650), (63, 65638), (64, 65629), (67, 65608), (70, 65581),

Gene: Vitas_27 Start: 20918, Stop: 20643, Start Num: 34
Candidate Starts for Vitas_27:
(Start: 34 @20918 has 1 MA's), (42, 20894), (Start: 44 @20891 has 8 MA's), (55, 20870), (59, 20834), (60, 20822), (67, 20780),

Gene: Waleliano_84 Start: 65393, Stop: 65115, Start Num: 47
Candidate Starts for Waleliano_84:
(Start: 47 @65393 has 18 MA's), (Start: 56 @65363 has 1 MA's), (60, 65318), (63, 65306), (64, 65297), (67, 65276), (70, 65249),

Gene: Wheezy_9 Start: 5755, Stop: 6006, Start Num: 49
Candidate Starts for Wheezy_9:
(26, 5635), (27, 5638), (Start: 49 @5755 has 12 MA's), (58, 5803), (74, 5917), (78, 5932), (82, 5992),

Gene: WhoseManz_7 Start: 3472, Stop: 3717, Start Num: 49
Candidate Starts for WhoseManz_7:
(8, 3247), (46, 3469), (Start: 49 @3472 has 12 MA's), (61, 3538), (67, 3574), (69, 3580), (70, 3610), (77, 3640), (78, 3646), (82, 3706),

Gene: Xincheng_78 Start: 65538, Stop: 65254, Start Num: 47
Candidate Starts for Xincheng_78:
(Start: 47 @65538 has 18 MA's), (Start: 56 @65502 has 1 MA's), (64, 65436), (66, 65427), (67, 65415), (71, 65382), (77, 65358),

Gene: Yndexa_7 Start: 3562, Stop: 3807, Start Num: 49
Candidate Starts for Yndexa_7:
(8, 3202), (46, 3559), (Start: 49 @3562 has 12 MA's), (61, 3628), (67, 3664), (69, 3670), (70, 3700), (77, 3730), (81, 3790), (82, 3796),

Gene: Zemanar_84 Start: 65406, Stop: 65128, Start Num: 47
Candidate Starts for Zemanar_84:

(Start: 47 @65406 has 18 MA's), (Start: 56 @65376 has 1 MA's), (60, 65331), (63, 65319), (64, 65310), (67, 65289), (70, 65262),

Gene: Zenteno07_96 Start: 67053, Stop: 66802, Start Num: 50
Candidate Starts for Zenteno07_96:
(Start: 50 @67053 has 3 MA's), (Start: 56 @67035 has 1 MA's), (73, 66894),