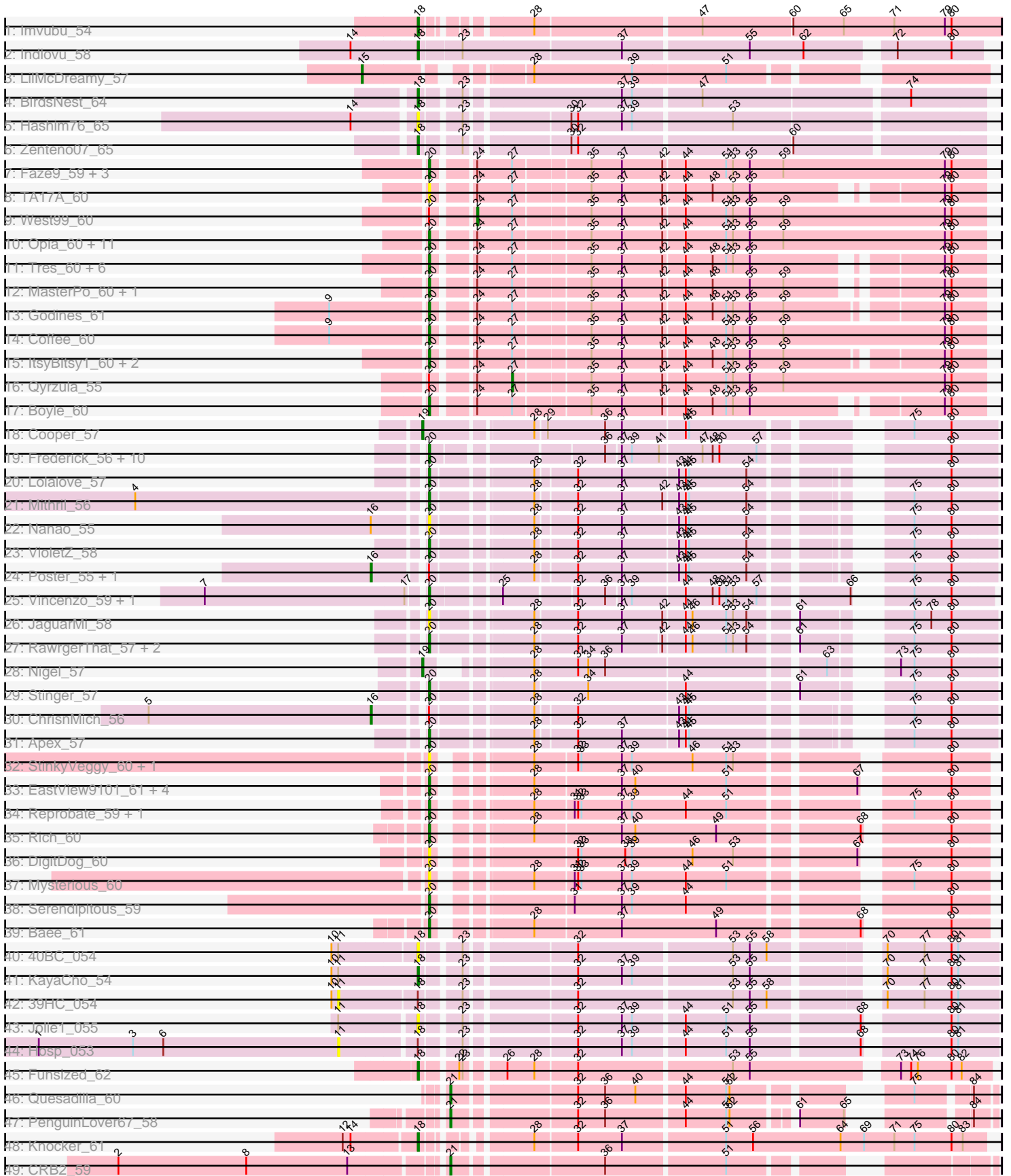


Pham 157774



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 157774 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157774 has 92 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Imvubu_54
- Track 2 : Indlovu_58
- Track 3 : LilMcDreamy_57
- Track 4 : BirdsNest_64
- Track 5 : Hashim76_65
- Track 6 : Zenteno07_65
- Track 7 : Faze9_59, Allegro_60, Blocker23_60, Phantasmagoria_60
- Track 8 : TA17A_60
- Track 9 : West99_60
- Track 10 : Opia_60, Kheth_60, Ares_60, Glass_60, Calamitous_60, Lars_60, Bananafish_60, Lephleur_60, FrenchFry_60, Arbiter_59, Holeinone_60, LizLemon_60
- Track 11 : Tres_60, Rhinoforte_60, Brownie5_60, Sabella_59, Hedgerow_60, Rosebush_59, Tinciduntolum_61
- Track 12 : MasterPo_60, Laurie_60
- Track 13 : Godines_61
- Track 14 : Coffee_60
- Track 15 : ItsyBitsy1_60, Eaglehorse_60, Kaleb_60
- Track 16 : Qyrzula_55
- Track 17 : Boyle_60
- Track 18 : Cooper_57
- Track 19 : Frederick_56, Mudslide_56, Zemanar_57, Waleliano_56, Hangman_56, BrownCNA_58, BobbyK_56, Heath_55, Prince_57, Austelle_57, Hydro_56
- Track 20 : Lolalove_57
- Track 21 : Mithril_56
- Track 22 : Nanao_55
- Track 23 : VioletZ_58
- Track 24 : Poster_55, JAMaL_56
- Track 25 : Vincenzo_59, AlanGrant_60
- Track 26 : JaguarMi_58
- Track 27 : RawrgerThat_57, Fortunato_57, Magpie_55
- Track 28 : Nigel_57
- Track 29 : Stinger_57
- Track 30 : ChrisnMich_56
- Track 31 : Apex_57
- Track 32 : StinkyVeggy_60, Nangang_60
- Track 33 : EastView9101_61, SirJeffery_59, Suigeneris_61, Acadian_60, Donny_61

- Track 34 : Reprobate_59, Phelemich_58
- Track 35 : Rich_60
- Track 36 : DigitDog_60
- Track 37 : Mysterious_60
- Track 38 : Serendipitous_59
- Track 39 : Bae_61
- Track 40 : 40BC_054
- Track 41 : KayaCho_54
- Track 42 : 39HC_054
- Track 43 : Jolie1_055
- Track 44 : Hosp_053
- Track 45 : Funsized_62
- Track 46 : Quesadilla_60
- Track 47 : PenguinLover67_58
- Track 48 : Knocker_61
- Track 49 : CRB2_59

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

The start number called the most often in the published annotations is 20, it was called in 56 of the 73 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acadian_60, AlanGrant_60, Allegro_60, Apex_57, Arbiter_59, Ares_60, Austelle_57, Bae_61, Bananafish_60, Blocker23_60, BobbyK_56, Boyle_60, BrownCNA_58, Brownie5_60, Calamitous_60, Coffee_60, DigitDog_60, Donny_61, Eaglehorse_60, EastView9101_61, Faze9_59, Fortunato_57, Frederick_56, FrenchFry_60, Glass_60, Godines_61, Hangman_56, Heath_55, Hedgerow_60, Holeinone_60, Hydro_56, ItsyBitsy1_60, JaguarMi_58, Kaleb_60, Kheth_60, Lars_60, Laurie_60, Lephleur_60, LizLemon_60, Lolalove_57, Magpie_55, MasterPo_60, Mithril_56, Mudslide_56, Mysterious_60, Nanao_55, Nangang_60, Opia_60, Phantasmagoria_60, Phelemich_58, Prince_57, RawrgerThat_57, Reprobate_59, Rhinoforte_60, Rich_60, Rosebush_59, Sabella_59, Serendipitous_59, SirJeffery_59, Stinger_57, StinkyVeggy_60, Suigeneris_61, TA17A_60, Tinciduntolum_61, Tres_60, Vincenzo_59, VioletZ_58, Waleliano_56, Zemanar_57,

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

- ChrisnMich_56, JAMaL_56, Poster_55, Qyrzula_55, West99_60,

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

- 39HC_054, 40BC_054, BirdsNest_64, CRB2_59, Cooper_57, Funsized_62, Hashim76_65, Hosp_053, Imvubu_54, Indlovu_58, Jolie1_055, KayaCho_54, Knocker_61, LilMcDreamy_57, Nigel_57, PenguinLover67_58, Quesadilla_60, Zenteno07_65,

Summary by start number:

Start 11:

- Found in 5 of 92 (5.4%) of genes in pham
- No Manual Annotations of this start.

- Called 40.0% of time when present
- Phage (with cluster) where this start called: 39HC_054 (B6), Hosp_053 (B6),

Start 15:

- Found in 1 of 92 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilMcDreamy_57 (B12),

Start 16:

- Found in 4 of 92 (4.3%) of genes in pham
- Manual Annotations of this start: 2 of 73
- Called 75.0% of time when present
- Phage (with cluster) where this start called: ChrisnMich_56 (B4), JAMaL_56 (B4), Poster_55 (B4),

Start 18:

- Found in 12 of 92 (13.0%) of genes in pham
- Manual Annotations of this start: 7 of 73
- Called 83.3% of time when present
- Phage (with cluster) where this start called: 40BC_054 (B6), BirdsNest_64 (B13), Funsized_62 (B9), Hashim76_65 (B13), Imvubu_54 (B10), Indlovu_58 (B11), Jolie1_055 (B6), KayaCho_54 (B6), Knocker_61 (B9), Zenteno07_65 (B13),

Start 19:

- Found in 2 of 92 (2.2%) of genes in pham
- Manual Annotations of this start: 2 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cooper_57 (B4), Nigel_57 (B4),

Start 20:

- Found in 74 of 92 (80.4%) of genes in pham
- Manual Annotations of this start: 56 of 73
- Called 93.2% of time when present
- Phage (with cluster) where this start called: Acadian_60 (B5), AlanGrant_60 (B4), Allegro_60 (B2), Apex_57 (B4), Arbiter_59 (B2), Ares_60 (B2), Austelle_57 (B4), Bae_61 (B5), Bananafish_60 (B2), Blocker23_60 (B2), BobbyK_56 (B4), Boyle_60 (B2), BrownCNA_58 (B4), Brownie5_60 (B2), Calamitous_60 (B2), Coffee_60 (B2), DigitDog_60 (B5), Donny_61 (B5), Eaglehorse_60 (B2), EastView9101_61 (B5), Faze9_59 (B2), Fortunato_57 (B4), Frederick_56 (B4), FrenchFry_60 (B2), Glass_60 (B2), Godines_61 (B2), Hangman_56 (B4), Heath_55 (B4), Hedgerow_60 (B2), Holeinone_60 (B2), Hydro_56 (B4), ItsyBitsy1_60 (B2), JaguarMi_58 (B4), Kaleb_60 (B2), Kheth_60 (B2), Lars_60 (B2), Laurie_60 (B2), Lephleur_60 (B2), LizLemon_60 (B2), Lolalove_57 (B4), Magpie_55 (B4), MasterPo_60 (B2), Mithril_56 (B4), Mudslide_56 (B4), Mysterious_60 (B5), Nanao_55 (B4), Nangang_60 (B5), Opia_60 (B2), Phantasmagoria_60 (B2), Phelemich_58 (B5), Prince_57 (B4), RawrgerThat_57 (B4), Reprobate_59 (B5), Rhinoforte_60 (B2), Rich_60 (B5), Rosebush_59 (B2), Sabella_59 (B2), Serendipitous_59 (B5), SirJeffery_59 (B5), Stinger_57 (B4), StinkyVeggy_60 (B5), Suigeneris_61 (B5), TA17A_60 (B2), Tinciduntolum_61 (B2), Tres_60 (B2), Vincenzo_59 (B4), VioletZ_58 (B4), Waleliano_56 (B4), Zemanar_57 (B4),

Start 21:

- Found in 3 of 92 (3.3%) of genes in pham
- Manual Annotations of this start: 3 of 73
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CRB2_59 (B9), PenguinLover67_58 (B9), Quesadilla_60 (B9),

Start 24:

- Found in 34 of 92 (37.0%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 2.9% of time when present
- Phage (with cluster) where this start called: West99_60 (B2),

Start 27:

- Found in 34 of 92 (37.0%) of genes in pham
- Manual Annotations of this start: 1 of 73
- Called 2.9% of time when present
- Phage (with cluster) where this start called: Qyrzula_55 (B2),

Summary by clusters:

There are 9 clusters represented in this pham: B2, B4, B5, B6, B12, B13, B10, B11, B9,

Info for manual annotations of cluster B10:

- Start number 18 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:

- Start number 18 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:

- Start number 15 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B13:

- Start number 18 was manually annotated 2 times for cluster B13.

Info for manual annotations of cluster B2:

- Start number 20 was manually annotated 30 times for cluster B2.
- Start number 24 was manually annotated 1 time for cluster B2.
- Start number 27 was manually annotated 1 time for cluster B2.

Info for manual annotations of cluster B4:

- Start number 16 was manually annotated 2 times for cluster B4.
- Start number 19 was manually annotated 2 times for cluster B4.
- Start number 20 was manually annotated 18 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 20 was manually annotated 8 times for cluster B5.

Info for manual annotations of cluster B6:

- Start number 18 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B9:

- Start number 18 was manually annotated 2 times for cluster B9.

- Start number 21 was manually annotated 3 times for cluster B9.

Gene Information:

Gene: 39HC_054 Start: 53638, Stop: 53117, Start Num: 11

Candidate Starts for 39HC_054:

(10, 53644), (11, 53638), (Start: 18 @53572 has 7 MA's), (23, 53542), (32, 53455), (53, 53323), (55, 53308), (58, 53293), (70, 53215), (77, 53182), (80, 53158), (81, 53152),

Gene: 40BC_054 Start: 53572, Stop: 53117, Start Num: 18

Candidate Starts for 40BC_054:

(10, 53644), (11, 53638), (Start: 18 @53572 has 7 MA's), (23, 53542), (32, 53455), (53, 53323), (55, 53308), (58, 53293), (70, 53215), (77, 53182), (80, 53158), (81, 53152),

Gene: Acadian_60 Start: 55536, Stop: 55105, Start Num: 20

Candidate Starts for Acadian_60:

(Start: 20 @55536 has 56 MA's), (28, 55470), (37, 55395), (40, 55383), (51, 55302), (67, 55200), (80, 55137),

Gene: AlanGrant_60 Start: 56832, Stop: 56401, Start Num: 20

Candidate Starts for AlanGrant_60:

(7, 57021), (17, 56844), (Start: 20 @56832 has 56 MA's), (25, 56778), (32, 56718), (36, 56694), (37, 56682), (39, 56673), (44, 56628), (48, 56604), (50, 56598), (51, 56592), (53, 56586), (57, 56565), (66, 56496), (75, 56469), (80, 56436),

Gene: Allegro_60 Start: 53809, Stop: 53339, Start Num: 20

Candidate Starts for Allegro_60:

(Start: 20 @53809 has 56 MA's), (Start: 24 @53779 has 1 MA's), (Start: 27 @53749 has 1 MA's), (35, 53686), (37, 53659), (42, 53623), (44, 53605), (51, 53569), (53, 53563), (55, 53548), (59, 53518), (79, 53374), (80, 53368),

Gene: Apex_57 Start: 55933, Stop: 55505, Start Num: 20

Candidate Starts for Apex_57:

(Start: 20 @55933 has 56 MA's), (28, 55855), (32, 55822), (37, 55783), (43, 55735), (44, 55729), (45, 55726), (75, 55576), (80, 55543),

Gene: Arbiter_59 Start: 53921, Stop: 53451, Start Num: 20

Candidate Starts for Arbiter_59:

(Start: 20 @53921 has 56 MA's), (Start: 24 @53891 has 1 MA's), (Start: 27 @53861 has 1 MA's), (35, 53798), (37, 53771), (42, 53735), (44, 53717), (51, 53681), (53, 53675), (55, 53660), (59, 53630), (79, 53486), (80, 53480),

Gene: Ares_60 Start: 53890, Stop: 53420, Start Num: 20

Candidate Starts for Ares_60:

(Start: 20 @53890 has 56 MA's), (Start: 24 @53860 has 1 MA's), (Start: 27 @53830 has 1 MA's), (35, 53767), (37, 53740), (42, 53704), (44, 53686), (51, 53650), (53, 53644), (55, 53629), (59, 53599), (79, 53455), (80, 53449),

Gene: Austelle_57 Start: 56389, Stop: 55958, Start Num: 20

Candidate Starts for Austelle_57:

(Start: 20 @56389 has 56 MA's), (36, 56254), (37, 56242), (39, 56233), (41, 56209), (47, 56173), (48, 56164), (50, 56158), (57, 56125), (80, 55996),

Gene: Bae_61 Start: 56597, Stop: 56163, Start Num: 20

Candidate Starts for Bae_61:

(Start: 20 @56597 has 56 MA's), (28, 56531), (37, 56456), (49, 56372), (68, 56258), (80, 56195),

Gene: Bananafish_60 Start: 53821, Stop: 53351, Start Num: 20

Candidate Starts for Bananafish_60:

(Start: 20 @53821 has 56 MA's), (Start: 24 @53791 has 1 MA's), (Start: 27 @53761 has 1 MA's), (35, 53698), (37, 53671), (42, 53635), (44, 53617), (51, 53581), (53, 53575), (55, 53560), (59, 53530), (79, 53386), (80, 53380),

Gene: BirdsNest_64 Start: 55434, Stop: 54970, Start Num: 18

Candidate Starts for BirdsNest_64:

(Start: 18 @55434 has 7 MA's), (23, 55404), (37, 55275), (39, 55266), (47, 55209), (74, 55035),

Gene: Blocker23_60 Start: 53931, Stop: 53461, Start Num: 20

Candidate Starts for Blocker23_60:

(Start: 20 @53931 has 56 MA's), (Start: 24 @53901 has 1 MA's), (Start: 27 @53871 has 1 MA's), (35, 53808), (37, 53781), (42, 53745), (44, 53727), (51, 53691), (53, 53685), (55, 53670), (59, 53640), (79, 53496), (80, 53490),

Gene: BobbyK_56 Start: 55699, Stop: 55268, Start Num: 20

Candidate Starts for BobbyK_56:

(Start: 20 @55699 has 56 MA's), (36, 55564), (37, 55552), (39, 55543), (41, 55519), (47, 55483), (48, 55474), (50, 55468), (57, 55435), (80, 55306),

Gene: Boyle_60 Start: 53930, Stop: 53490, Start Num: 20

Candidate Starts for Boyle_60:

(Start: 20 @53930 has 56 MA's), (Start: 24 @53900 has 1 MA's), (Start: 27 @53870 has 1 MA's), (35, 53807), (37, 53780), (42, 53744), (44, 53726), (48, 53702), (51, 53690), (53, 53684), (55, 53669), (79, 53525), (80, 53519),

Gene: BrownCNA_58 Start: 56056, Stop: 55625, Start Num: 20

Candidate Starts for BrownCNA_58:

(Start: 20 @56056 has 56 MA's), (36, 55921), (37, 55909), (39, 55900), (41, 55876), (47, 55840), (48, 55831), (50, 55825), (57, 55792), (80, 55663),

Gene: Brownie5_60 Start: 53940, Stop: 53500, Start Num: 20

Candidate Starts for Brownie5_60:

(Start: 20 @53940 has 56 MA's), (Start: 24 @53910 has 1 MA's), (Start: 27 @53880 has 1 MA's), (35, 53817), (37, 53790), (42, 53754), (44, 53736), (48, 53712), (51, 53700), (53, 53694), (55, 53679), (79, 53535), (80, 53529),

Gene: CRB2_59 Start: 56619, Stop: 56215, Start Num: 21

Candidate Starts for CRB2_59:

(2, 56895), (8, 56781), (13, 56691), (Start: 21 @56619 has 3 MA's), (36, 56499), (51, 56397),

Gene: Calamitous_60 Start: 53820, Stop: 53350, Start Num: 20

Candidate Starts for Calamitous_60:

(Start: 20 @53820 has 56 MA's), (Start: 24 @53790 has 1 MA's), (Start: 27 @53760 has 1 MA's), (35, 53697), (37, 53670), (42, 53634), (44, 53616), (51, 53580), (53, 53574), (55, 53559), (59, 53529), (79,

53385), (80, 53379),

Gene: ChrisnMich_56 Start: 54764, Stop: 54297, Start Num: 16

Candidate Starts for ChrisnMich_56:

(5, 54962), (Start: 16 @54764 has 2 MA's), (Start: 20 @54725 has 56 MA's), (28, 54647), (32, 54614), (43, 54527), (44, 54521), (45, 54518), (75, 54368), (80, 54335),

Gene: Coffee_60 Start: 53932, Stop: 53462, Start Num: 20

Candidate Starts for Coffee_60:

(9, 54016), (Start: 20 @53932 has 56 MA's), (Start: 24 @53902 has 1 MA's), (Start: 27 @53872 has 1 MA's), (35, 53809), (37, 53782), (42, 53746), (44, 53728), (51, 53692), (53, 53686), (55, 53671), (59, 53641), (79, 53497), (80, 53491),

Gene: Cooper_57 Start: 54888, Stop: 54442, Start Num: 19

Candidate Starts for Cooper_57:

(Start: 19 @54888 has 2 MA's), (28, 54801), (29, 54792), (36, 54741), (37, 54726), (44, 54672), (45, 54669), (75, 54513), (80, 54480),

Gene: DigitDog_60 Start: 55479, Stop: 55048, Start Num: 20

Candidate Starts for DigitDog_60:

(Start: 20 @55479 has 56 MA's), (32, 55377), (33, 55374), (38, 55335), (39, 55329), (46, 55275), (53, 55239), (67, 55143), (80, 55080),

Gene: Donny_61 Start: 55582, Stop: 55151, Start Num: 20

Candidate Starts for Donny_61:

(Start: 20 @55582 has 56 MA's), (28, 55516), (37, 55441), (40, 55429), (51, 55348), (67, 55246), (80, 55183),

Gene: Eaglehorse_60 Start: 53852, Stop: 53400, Start Num: 20

Candidate Starts for Eaglehorse_60:

(Start: 20 @53852 has 56 MA's), (Start: 24 @53822 has 1 MA's), (Start: 27 @53792 has 1 MA's), (35, 53729), (37, 53702), (42, 53666), (44, 53648), (48, 53624), (51, 53612), (53, 53606), (55, 53591), (59, 53561), (79, 53435), (80, 53429),

Gene: EastView9101_61 Start: 55391, Stop: 54960, Start Num: 20

Candidate Starts for EastView9101_61:

(Start: 20 @55391 has 56 MA's), (28, 55325), (37, 55250), (40, 55238), (51, 55157), (67, 55055), (80, 54992),

Gene: Faze9_59 Start: 53955, Stop: 53485, Start Num: 20

Candidate Starts for Faze9_59:

(Start: 20 @53955 has 56 MA's), (Start: 24 @53925 has 1 MA's), (Start: 27 @53895 has 1 MA's), (35, 53832), (37, 53805), (42, 53769), (44, 53751), (51, 53715), (53, 53709), (55, 53694), (59, 53664), (79, 53520), (80, 53514),

Gene: Fortunato_57 Start: 55748, Stop: 55314, Start Num: 20

Candidate Starts for Fortunato_57:

(Start: 20 @55748 has 56 MA's), (28, 55670), (32, 55634), (37, 55595), (42, 55559), (44, 55541), (46, 55535), (51, 55505), (53, 55499), (54, 55487), (61, 55454), (75, 55385), (80, 55352),

Gene: Frederick_56 Start: 55642, Stop: 55211, Start Num: 20

Candidate Starts for Frederick_56:

(Start: 20 @55642 has 56 MA's), (36, 55507), (37, 55495), (39, 55486), (41, 55462), (47, 55426), (48, 55417), (50, 55411), (57, 55378), (80, 55249),

Gene: FrenchFry_60 Start: 53931, Stop: 53461, Start Num: 20

Candidate Starts for FrenchFry_60:

(Start: 20 @53931 has 56 MA's), (Start: 24 @53901 has 1 MA's), (Start: 27 @53871 has 1 MA's), (35, 53808), (37, 53781), (42, 53745), (44, 53727), (51, 53691), (53, 53685), (55, 53670), (59, 53640), (79, 53496), (80, 53490),

Gene: Funsized_62 Start: 57679, Stop: 57218, Start Num: 18

Candidate Starts for Funsized_62:

(Start: 18 @57679 has 7 MA's), (22, 57652), (23, 57649), (26, 57622), (28, 57598), (32, 57562), (53, 57430), (55, 57415), (73, 57298), (74, 57289), (76, 57283), (80, 57253), (82, 57244),

Gene: Glass_60 Start: 53933, Stop: 53463, Start Num: 20

Candidate Starts for Glass_60:

(Start: 20 @53933 has 56 MA's), (Start: 24 @53903 has 1 MA's), (Start: 27 @53873 has 1 MA's), (35, 53810), (37, 53783), (42, 53747), (44, 53729), (51, 53693), (53, 53687), (55, 53672), (59, 53642), (79, 53498), (80, 53492),

Gene: Godines_61 Start: 54198, Stop: 53746, Start Num: 20

Candidate Starts for Godines_61:

(9, 54282), (Start: 20 @54198 has 56 MA's), (Start: 24 @54168 has 1 MA's), (Start: 27 @54138 has 1 MA's), (35, 54075), (37, 54048), (42, 54012), (44, 53994), (48, 53970), (51, 53958), (53, 53952), (55, 53937), (59, 53907), (79, 53781), (80, 53775),

Gene: Hangman_56 Start: 55799, Stop: 55368, Start Num: 20

Candidate Starts for Hangman_56:

(Start: 20 @55799 has 56 MA's), (36, 55664), (37, 55652), (39, 55643), (41, 55619), (47, 55583), (48, 55574), (50, 55568), (57, 55535), (80, 55406),

Gene: Hashim76_65 Start: 55719, Stop: 55258, Start Num: 18

Candidate Starts for Hashim76_65:

(14, 55770), (Start: 18 @55719 has 7 MA's), (23, 55689), (30, 55608), (32, 55602), (37, 55563), (39, 55554), (53, 55470),

Gene: Heath_55 Start: 55425, Stop: 54994, Start Num: 20

Candidate Starts for Heath_55:

(Start: 20 @55425 has 56 MA's), (36, 55290), (37, 55278), (39, 55269), (41, 55245), (47, 55209), (48, 55200), (50, 55194), (57, 55161), (80, 55032),

Gene: Hedgerow_60 Start: 53915, Stop: 53475, Start Num: 20

Candidate Starts for Hedgerow_60:

(Start: 20 @53915 has 56 MA's), (Start: 24 @53885 has 1 MA's), (Start: 27 @53855 has 1 MA's), (35, 53792), (37, 53765), (42, 53729), (44, 53711), (48, 53687), (51, 53675), (53, 53669), (55, 53654), (79, 53510), (80, 53504),

Gene: Holeinone_60 Start: 53787, Stop: 53317, Start Num: 20

Candidate Starts for Holeinone_60:

(Start: 20 @53787 has 56 MA's), (Start: 24 @53757 has 1 MA's), (Start: 27 @53727 has 1 MA's), (35, 53664), (37, 53637), (42, 53601), (44, 53583), (51, 53547), (53, 53541), (55, 53526), (59, 53496), (79, 53352), (80, 53346),

Gene: Hosp_053 Start: 52031, Stop: 51510, Start Num: 11

Candidate Starts for Hosp_053:

(1, 52298), (3, 52214), (6, 52187), (11, 52031), (Start: 18 @51968 has 7 MA's), (23, 51938), (32, 51851), (37, 51812), (39, 51803), (44, 51761), (51, 51725), (55, 51704), (68, 51614), (80, 51551), (81, 51545),

Gene: Hydro_56 Start: 55776, Stop: 55345, Start Num: 20

Candidate Starts for Hydro_56:

(Start: 20 @55776 has 56 MA's), (36, 55641), (37, 55629), (39, 55620), (41, 55596), (47, 55560), (48, 55551), (50, 55545), (57, 55512), (80, 55383),

Gene: Imvubu_54 Start: 53064, Stop: 52585, Start Num: 18

Candidate Starts for Imvubu_54:

(Start: 18 @53064 has 7 MA's), (28, 52989), (47, 52848), (60, 52770), (65, 52725), (71, 52680), (79, 52635), (80, 52629),

Gene: Indlovu_58 Start: 55544, Stop: 55074, Start Num: 18

Candidate Starts for Indlovu_58:

(14, 55601), (Start: 18 @55544 has 7 MA's), (23, 55508), (37, 55370), (55, 55262), (62, 55214), (72, 55148), (80, 55100),

Gene: ItsyBitsy1_60 Start: 54065, Stop: 53613, Start Num: 20

Candidate Starts for ItsyBitsy1_60:

(Start: 20 @54065 has 56 MA's), (Start: 24 @54035 has 1 MA's), (Start: 27 @54005 has 1 MA's), (35, 53942), (37, 53915), (42, 53879), (44, 53861), (48, 53837), (51, 53825), (53, 53819), (55, 53804), (59, 53774), (79, 53648), (80, 53642),

Gene: JAMaL_56 Start: 55857, Stop: 55390, Start Num: 16

Candidate Starts for JAMaL_56:

(Start: 16 @55857 has 2 MA's), (Start: 20 @55818 has 56 MA's), (28, 55740), (32, 55707), (37, 55668), (43, 55620), (44, 55614), (45, 55611), (54, 55560), (75, 55461), (80, 55428),

Gene: JaguarMi_58 Start: 56843, Stop: 56409, Start Num: 20

Candidate Starts for JaguarMi_58:

(Start: 20 @56843 has 56 MA's), (28, 56765), (32, 56729), (37, 56690), (42, 56654), (44, 56636), (46, 56630), (51, 56600), (53, 56594), (54, 56582), (61, 56549), (75, 56480), (78, 56465), (80, 56447),

Gene: Jolie1_055 Start: 53868, Stop: 53410, Start Num: 18

Candidate Starts for Jolie1_055:

(11, 53931), (Start: 18 @53868 has 7 MA's), (23, 53838), (32, 53751), (37, 53712), (39, 53703), (44, 53661), (51, 53625), (55, 53604), (68, 53514), (80, 53451), (81, 53445),

Gene: Kaleb_60 Start: 53939, Stop: 53499, Start Num: 20

Candidate Starts for Kaleb_60:

(Start: 20 @53939 has 56 MA's), (Start: 24 @53909 has 1 MA's), (Start: 27 @53879 has 1 MA's), (35, 53816), (37, 53789), (42, 53753), (44, 53735), (48, 53711), (51, 53699), (53, 53693), (55, 53678), (59, 53648), (79, 53534), (80, 53528),

Gene: KayaCho_54 Start: 53811, Stop: 53356, Start Num: 18

Candidate Starts for KayaCho_54:

(10, 53886), (11, 53880), (Start: 18 @53811 has 7 MA's), (23, 53781), (32, 53694), (37, 53655), (39, 53646), (53, 53562), (55, 53547), (70, 53454), (77, 53421), (80, 53397), (81, 53391),

Gene: Kheth_60 Start: 53852, Stop: 53382, Start Num: 20

Candidate Starts for Kheth_60:

(Start: 20 @53852 has 56 MA's), (Start: 24 @53822 has 1 MA's), (Start: 27 @53792 has 1 MA's), (35, 53729), (37, 53702), (42, 53666), (44, 53648), (51, 53612), (53, 53606), (55, 53591), (59, 53561), (79, 53417), (80, 53411),

Gene: Knocker_61 Start: 57083, Stop: 56619, Start Num: 18

Candidate Starts for Knocker_61:

(12, 57143), (14, 57137), (Start: 18 @57083 has 7 MA's), (28, 57011), (32, 56975), (37, 56936), (51, 56849), (56, 56825), (64, 56747), (69, 56726), (71, 56699), (75, 56681), (80, 56648), (83, 56639),

Gene: Lars_60 Start: 53917, Stop: 53447, Start Num: 20

Candidate Starts for Lars_60:

(Start: 20 @53917 has 56 MA's), (Start: 24 @53887 has 1 MA's), (Start: 27 @53857 has 1 MA's), (35, 53794), (37, 53767), (42, 53731), (44, 53713), (51, 53677), (53, 53671), (55, 53656), (59, 53626), (79, 53482), (80, 53476),

Gene: Laurie_60 Start: 53614, Stop: 53174, Start Num: 20

Candidate Starts for Laurie_60:

(Start: 20 @53614 has 56 MA's), (Start: 24 @53584 has 1 MA's), (Start: 27 @53554 has 1 MA's), (35, 53491), (37, 53464), (42, 53428), (44, 53410), (48, 53386), (55, 53353), (59, 53323), (79, 53209), (80, 53203),

Gene: Lephleur_60 Start: 53826, Stop: 53356, Start Num: 20

Candidate Starts for Lephleur_60:

(Start: 20 @53826 has 56 MA's), (Start: 24 @53796 has 1 MA's), (Start: 27 @53766 has 1 MA's), (35, 53703), (37, 53676), (42, 53640), (44, 53622), (51, 53586), (53, 53580), (55, 53565), (59, 53535), (79, 53391), (80, 53385),

Gene: LilMcDreamy_57 Start: 54942, Stop: 54460, Start Num: 15

Candidate Starts for LilMcDreamy_57:

(Start: 15 @54942 has 1 MA's), (28, 54825), (39, 54738), (51, 54657),

Gene: LizLemon_60 Start: 53942, Stop: 53472, Start Num: 20

Candidate Starts for LizLemon_60:

(Start: 20 @53942 has 56 MA's), (Start: 24 @53912 has 1 MA's), (Start: 27 @53882 has 1 MA's), (35, 53819), (37, 53792), (42, 53756), (44, 53738), (51, 53702), (53, 53696), (55, 53681), (59, 53651), (79, 53507), (80, 53501),

Gene: Lolalove_57 Start: 55756, Stop: 55328, Start Num: 20

Candidate Starts for Lolalove_57:

(Start: 20 @55756 has 56 MA's), (28, 55678), (32, 55645), (37, 55606), (43, 55558), (44, 55552), (45, 55549), (54, 55498), (80, 55366),

Gene: Magpie_55 Start: 55681, Stop: 55247, Start Num: 20

Candidate Starts for Magpie_55:

(Start: 20 @55681 has 56 MA's), (28, 55603), (32, 55567), (37, 55528), (42, 55492), (44, 55474), (46, 55468), (51, 55438), (53, 55432), (54, 55420), (61, 55387), (75, 55318), (80, 55285),

Gene: MasterPo_60 Start: 53808, Stop: 53368, Start Num: 20

Candidate Starts for MasterPo_60:

(Start: 20 @53808 has 56 MA's), (Start: 24 @53778 has 1 MA's), (Start: 27 @53748 has 1 MA's), (35, 53685), (37, 53658), (42, 53622), (44, 53604), (48, 53580), (55, 53547), (59, 53517), (79, 53403), (80,

53397),

Gene: Mithril_56 Start: 55751, Stop: 55323, Start Num: 20

Candidate Starts for Mithril_56:

(4, 56000), (Start: 20 @55751 has 56 MA's), (28, 55673), (32, 55640), (37, 55601), (42, 55565), (43, 55553), (44, 55547), (45, 55544), (54, 55493), (75, 55394), (80, 55361),

Gene: Mudslide_56 Start: 56021, Stop: 55590, Start Num: 20

Candidate Starts for Mudslide_56:

(Start: 20 @56021 has 56 MA's), (36, 55886), (37, 55874), (39, 55865), (41, 55841), (47, 55805), (48, 55796), (50, 55790), (57, 55757), (80, 55628),

Gene: Mysterious_60 Start: 55658, Stop: 55227, Start Num: 20

Candidate Starts for Mysterious_60:

(Start: 20 @55658 has 56 MA's), (28, 55592), (31, 55559), (32, 55556), (33, 55553), (37, 55517), (39, 55508), (44, 55460), (51, 55424), (75, 55292), (80, 55259),

Gene: Nanao_55 Start: 54716, Stop: 54288, Start Num: 20

Candidate Starts for Nanao_55:

(Start: 16 @54755 has 2 MA's), (Start: 20 @54716 has 56 MA's), (28, 54638), (32, 54605), (37, 54566), (43, 54518), (44, 54512), (45, 54509), (54, 54458), (75, 54359), (80, 54326),

Gene: Nangang_60 Start: 55837, Stop: 55406, Start Num: 20

Candidate Starts for Nangang_60:

(Start: 20 @55837 has 56 MA's), (28, 55771), (32, 55735), (33, 55732), (37, 55696), (39, 55687), (46, 55633), (51, 55603), (53, 55597), (80, 55438),

Gene: Nigel_57 Start: 55086, Stop: 54667, Start Num: 19

Candidate Starts for Nigel_57:

(Start: 19 @55086 has 2 MA's), (28, 55023), (32, 54987), (34, 54978), (36, 54963), (63, 54783), (73, 54750), (75, 54738), (80, 54705),

Gene: Opia_60 Start: 53832, Stop: 53362, Start Num: 20

Candidate Starts for Opia_60:

(Start: 20 @53832 has 56 MA's), (Start: 24 @53802 has 1 MA's), (Start: 27 @53772 has 1 MA's), (35, 53709), (37, 53682), (42, 53646), (44, 53628), (51, 53592), (53, 53586), (55, 53571), (59, 53541), (79, 53397), (80, 53391),

Gene: PenguinLover67_58 Start: 55676, Stop: 55281, Start Num: 21

Candidate Starts for PenguinLover67_58:

(Start: 21 @55676 has 3 MA's), (32, 55580), (36, 55556), (44, 55490), (51, 55454), (52, 55451), (61, 55406), (65, 55367), (84, 55298),

Gene: Phantasmagoria_60 Start: 53830, Stop: 53360, Start Num: 20

Candidate Starts for Phantasmagoria_60:

(Start: 20 @53830 has 56 MA's), (Start: 24 @53800 has 1 MA's), (Start: 27 @53770 has 1 MA's), (35, 53707), (37, 53680), (42, 53644), (44, 53626), (51, 53590), (53, 53584), (55, 53569), (59, 53539), (79, 53395), (80, 53389),

Gene: Phelemich_58 Start: 55654, Stop: 55223, Start Num: 20

Candidate Starts for Phelemich_58:

(Start: 20 @55654 has 56 MA's), (28, 55588), (31, 55555), (32, 55552), (33, 55549), (37, 55513), (39, 55504), (44, 55456), (51, 55420), (75, 55288), (80, 55255),

Gene: Poster_55 Start: 54756, Stop: 54289, Start Num: 16

Candidate Starts for Poster_55:

(Start: 16 @54756 has 2 MA's), (Start: 20 @54717 has 56 MA's), (28, 54639), (32, 54606), (37, 54567), (43, 54519), (44, 54513), (45, 54510), (54, 54459), (75, 54360), (80, 54327),

Gene: Prince_57 Start: 55934, Stop: 55503, Start Num: 20

Candidate Starts for Prince_57:

(Start: 20 @55934 has 56 MA's), (36, 55799), (37, 55787), (39, 55778), (41, 55754), (47, 55718), (48, 55709), (50, 55703), (57, 55670), (80, 55541),

Gene: Quesadilla_60 Start: 55946, Stop: 55548, Start Num: 21

Candidate Starts for Quesadilla_60:

(Start: 21 @55946 has 3 MA's), (32, 55850), (36, 55826), (40, 55799), (44, 55760), (51, 55724), (52, 55721), (75, 55607), (84, 55565),

Gene: Qyrzula_55 Start: 53883, Stop: 53473, Start Num: 27

Candidate Starts for Qyrzula_55:

(Start: 20 @53943 has 56 MA's), (Start: 24 @53913 has 1 MA's), (Start: 27 @53883 has 1 MA's), (35, 53820), (37, 53793), (42, 53757), (44, 53739), (51, 53703), (53, 53697), (55, 53682), (59, 53652), (79, 53508), (80, 53502),

Gene: RawrgerThat_57 Start: 55774, Stop: 55343, Start Num: 20

Candidate Starts for RawrgerThat_57:

(Start: 20 @55774 has 56 MA's), (28, 55696), (32, 55660), (37, 55621), (42, 55588), (44, 55570), (46, 55564), (51, 55534), (53, 55528), (54, 55516), (61, 55483), (75, 55414), (80, 55381),

Gene: Reprobate_59 Start: 55659, Stop: 55228, Start Num: 20

Candidate Starts for Reprobate_59:

(Start: 20 @55659 has 56 MA's), (28, 55593), (31, 55560), (32, 55557), (33, 55554), (37, 55518), (39, 55509), (44, 55461), (51, 55425), (75, 55293), (80, 55260),

Gene: Rhinoforte_60 Start: 53909, Stop: 53469, Start Num: 20

Candidate Starts for Rhinoforte_60:

(Start: 20 @53909 has 56 MA's), (Start: 24 @53879 has 1 MA's), (Start: 27 @53849 has 1 MA's), (35, 53786), (37, 53759), (42, 53723), (44, 53705), (48, 53681), (51, 53669), (53, 53663), (55, 53648), (79, 53504), (80, 53498),

Gene: Rich_60 Start: 56869, Stop: 56435, Start Num: 20

Candidate Starts for Rich_60:

(Start: 20 @56869 has 56 MA's), (28, 56803), (37, 56728), (40, 56716), (49, 56644), (68, 56530), (80, 56467),

Gene: Rosebush_59 Start: 53936, Stop: 53496, Start Num: 20

Candidate Starts for Rosebush_59:

(Start: 20 @53936 has 56 MA's), (Start: 24 @53906 has 1 MA's), (Start: 27 @53876 has 1 MA's), (35, 53813), (37, 53786), (42, 53750), (44, 53732), (48, 53708), (51, 53696), (53, 53690), (55, 53675), (79, 53531), (80, 53525),

Gene: Sabella_59 Start: 53772, Stop: 53332, Start Num: 20

Candidate Starts for Sabella_59:

(Start: 20 @53772 has 56 MA's), (Start: 24 @53742 has 1 MA's), (Start: 27 @53712 has 1 MA's), (35, 53649), (37, 53622), (42, 53586), (44, 53568), (48, 53544), (51, 53532), (53, 53526), (55, 53511), (79,

53367), (80, 53361),

Gene: Serendipitous_59 Start: 55249, Stop: 54818, Start Num: 20

Candidate Starts for Serendipitous_59:

(Start: 20 @55249 has 56 MA's), (31, 55150), (37, 55108), (39, 55099), (44, 55051), (80, 54850),

Gene: SirJeffery_59 Start: 55613, Stop: 55182, Start Num: 20

Candidate Starts for SirJeffery_59:

(Start: 20 @55613 has 56 MA's), (28, 55547), (37, 55472), (40, 55460), (51, 55379), (67, 55277), (80, 55214),

Gene: Stinger_57 Start: 54647, Stop: 54213, Start Num: 20

Candidate Starts for Stinger_57:

(Start: 20 @54647 has 56 MA's), (28, 54569), (34, 54524), (44, 54440), (61, 54353), (75, 54284), (80, 54251),

Gene: StinkyVeggy_60 Start: 55658, Stop: 55227, Start Num: 20

Candidate Starts for StinkyVeggy_60:

(Start: 20 @55658 has 56 MA's), (28, 55592), (32, 55556), (33, 55553), (37, 55517), (39, 55508), (46, 55454), (51, 55424), (53, 55418), (80, 55259),

Gene: Suigeneris_61 Start: 55734, Stop: 55303, Start Num: 20

Candidate Starts for Suigeneris_61:

(Start: 20 @55734 has 56 MA's), (28, 55668), (37, 55593), (40, 55581), (51, 55500), (67, 55398), (80, 55335),

Gene: TA17A_60 Start: 53777, Stop: 53337, Start Num: 20

Candidate Starts for TA17A_60:

(Start: 20 @53777 has 56 MA's), (Start: 24 @53747 has 1 MA's), (Start: 27 @53717 has 1 MA's), (35, 53654), (37, 53627), (42, 53591), (44, 53573), (48, 53549), (53, 53531), (55, 53516), (79, 53372), (80, 53366),

Gene: Tinciduntolum_61 Start: 53939, Stop: 53499, Start Num: 20

Candidate Starts for Tinciduntolum_61:

(Start: 20 @53939 has 56 MA's), (Start: 24 @53909 has 1 MA's), (Start: 27 @53879 has 1 MA's), (35, 53816), (37, 53789), (42, 53753), (44, 53735), (48, 53711), (51, 53699), (53, 53693), (55, 53678), (79, 53534), (80, 53528),

Gene: Tres_60 Start: 53793, Stop: 53353, Start Num: 20

Candidate Starts for Tres_60:

(Start: 20 @53793 has 56 MA's), (Start: 24 @53763 has 1 MA's), (Start: 27 @53733 has 1 MA's), (35, 53670), (37, 53643), (42, 53607), (44, 53589), (48, 53565), (51, 53553), (53, 53547), (55, 53532), (79, 53388), (80, 53382),

Gene: Vincenzo_59 Start: 56862, Stop: 56431, Start Num: 20

Candidate Starts for Vincenzo_59:

(7, 57051), (17, 56874), (Start: 20 @56862 has 56 MA's), (25, 56808), (32, 56748), (36, 56724), (37, 56712), (39, 56703), (44, 56658), (48, 56634), (50, 56628), (51, 56622), (53, 56616), (57, 56595), (66, 56526), (75, 56499), (80, 56466),

Gene: VioletZ_58 Start: 55847, Stop: 55419, Start Num: 20

Candidate Starts for VioletZ_58:

(Start: 20 @55847 has 56 MA's), (28, 55769), (32, 55736), (37, 55697), (43, 55649), (44, 55643), (45, 55640), (54, 55589), (75, 55490), (80, 55457),

Gene: Waleliano_56 Start: 55788, Stop: 55357, Start Num: 20

Candidate Starts for Waleliano_56:

(Start: 20 @55788 has 56 MA's), (36, 55653), (37, 55641), (39, 55632), (41, 55608), (47, 55572), (48, 55563), (50, 55557), (57, 55524), (80, 55395),

Gene: West99_60 Start: 53936, Stop: 53496, Start Num: 24

Candidate Starts for West99_60:

(Start: 20 @53966 has 56 MA's), (Start: 24 @53936 has 1 MA's), (Start: 27 @53906 has 1 MA's), (35, 53843), (37, 53816), (42, 53780), (44, 53762), (51, 53726), (53, 53720), (55, 53705), (59, 53675), (79, 53531), (80, 53525),

Gene: Zemanar_57 Start: 55620, Stop: 55189, Start Num: 20

Candidate Starts for Zemanar_57:

(Start: 20 @55620 has 56 MA's), (36, 55485), (37, 55473), (39, 55464), (41, 55440), (47, 55404), (48, 55395), (50, 55389), (57, 55356), (80, 55227),

Gene: Zenteno07_65 Start: 55334, Stop: 54873, Start Num: 18

Candidate Starts for Zenteno07_65:

(Start: 18 @55334 has 7 MA's), (23, 55304), (30, 55223), (32, 55217), (60, 55034),