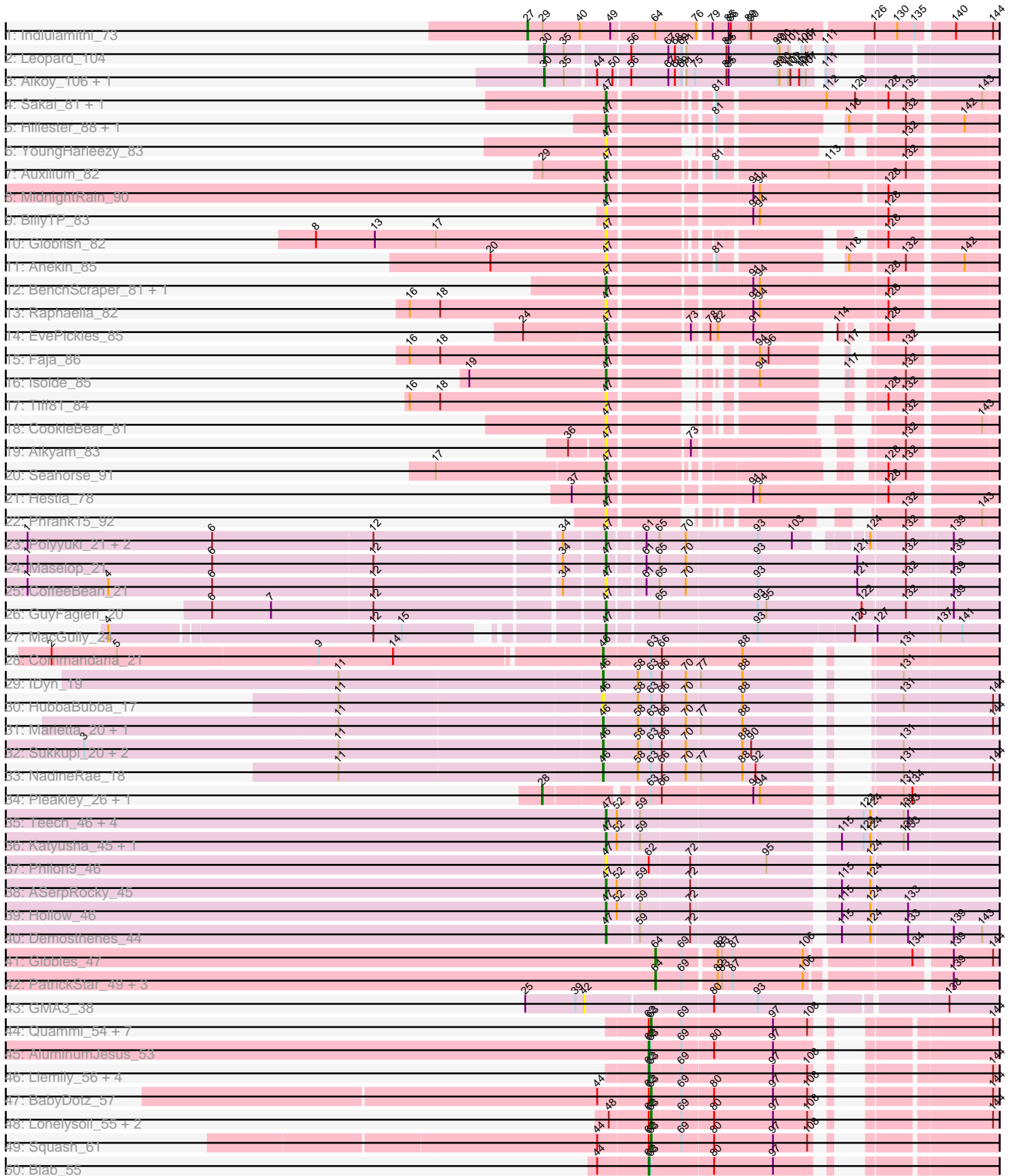
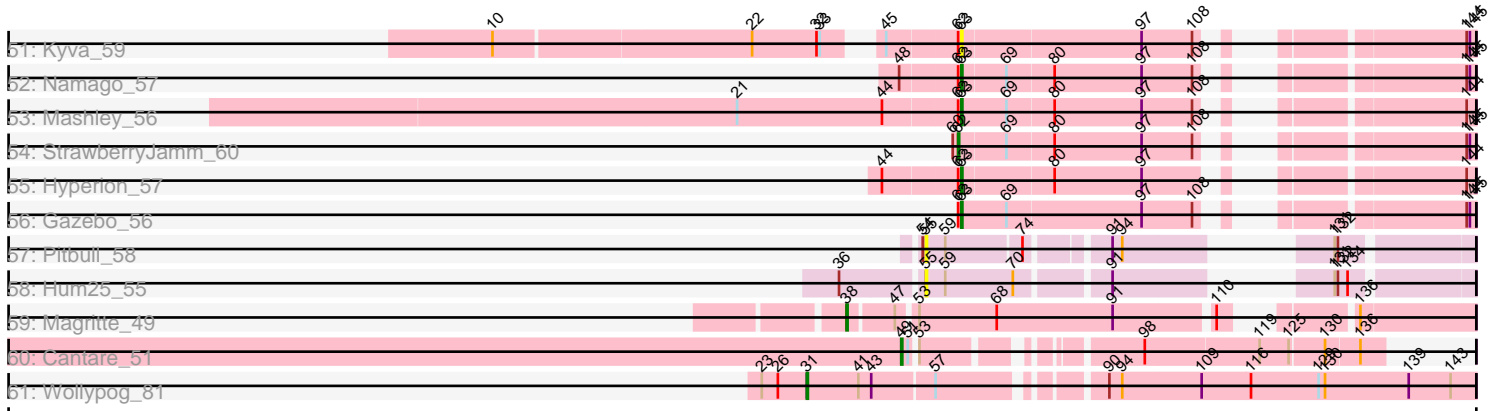


Pham 163510



Pham 163510



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 163510 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163510 has 92 members, 24 are drafts.

Phages represented in each track:

- Track 1 : Indlulamithi_73
- Track 2 : Leopard_104
- Track 3 : Aikoy_106, Onyinye_105
- Track 4 : Sakai_81, Gorpy_82
- Track 5 : Hillester_88, RadFad_89
- Track 6 : YoungHarleezy_83
- Track 7 : Auxilium_82
- Track 8 : MidnightRain_90
- Track 9 : BillyTP_83
- Track 10 : Globfish_82
- Track 11 : Anekin_85
- Track 12 : BenchScraper_81, Richie_87
- Track 13 : Raphaella_82
- Track 14 : EvePickles_85
- Track 15 : Faja_86
- Track 16 : Isolde_85
- Track 17 : Tiff81_84
- Track 18 : CookieBear_81
- Track 19 : Aikyam_83
- Track 20 : Seahorse_91
- Track 21 : Hestia_78
- Track 22 : Phrank15_92
- Track 23 : Polyuyuki_21, Braxoaddie_21, Apiary_21
- Track 24 : Maselop_21
- Track 25 : CoffeeBean_21
- Track 26 : GuyFagieri_20
- Track 27 : MacGully_24
- Track 28 : Commandaria_21
- Track 29 : IDyn_19
- Track 30 : HubbaBubba_17
- Track 31 : Marietta_20, WhoseManz_20
- Track 32 : Sukkupi_20, BiPauneto_21, Yndexa_20
- Track 33 : NadineRae_18
- Track 34 : Pleakley_26, Fury_26
- Track 35 : Teech_46, Tredge_46, Niagara_45, Kvothe_45, Teatealatte_46
- Track 36 : Katyusha_45, Benczkowski14_45
- Track 37 : Philon9_46

- Track 38 : ASerpRocky_45
- Track 39 : Hollow_46
- Track 40 : Demosthenes_44
- Track 41 : Gibbles_47
- Track 42 : PatrickStar_49, RobinSparkles_52, Orchid_48, Kampe_49
- Track 43 : GMA3_38
- Track 44 : Quammi_54, Wheelie_56, Sillytadpoles_57, DonaldDuck_56, Viceroy_55, Casend_57, Wayne3_58, Teehee_57
- Track 45 : AluminumJesus_53
- Track 46 : Llemily_56, Zhafia_59, Jehoshaphat_58, Rudy_54, Phabia_56
- Track 47 : BabyDotz_57
- Track 48 : Lonelysoil_55, Zagie_57, Judebell_59
- Track 49 : Squash_61
- Track 50 : Blab_55
- Track 51 : Kyva_59
- Track 52 : Namago_57
- Track 53 : Mashley_56
- Track 54 : StrawberryJamm_60
- Track 55 : Hyperion_57
- Track 56 : Gazebo_56
- Track 57 : Pitbull_58
- Track 58 : Hum25_55
- Track 59 : Magritte_49
- Track 60 : Cantare_51
- Track 61 : Wollypog_81

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 26 of the 68 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ASerpRocky_45, Aikyam_83, Anekin_85, Apiary_21, Auxilium_82, BenchScraper_81, Benczkowski14_45, BillyTP_83, Braxoaddie_21, CoffeeBean_21, CookieBear_81, Demosthenes_44, EvePickles_85, Faja_86, Globfish_82, Gorpy_82, GuyFagieri_20, Hestia_78, Hillester_88, Hollow_46, Isolde_85, Katyusha_45, Kvothe_45, MacGully_24, Maselop_21, MidnightRain_90, Niagara_45, Philon9_46, Phrank15_92, Polyyuki_21, RadFad_89, Raphaella_82, Richie_87, Sakai_81, Seahorse_91, Teatealatte_46, Teech_46, Tiff81_84, Tredge_46, YoungHarleezy_83,

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

- Magritte_49,

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

- Aikoy_106, AluminumJesus_53, BabyDotz_57, BiPauneto_21, Blab_55, Cantare_51, Casend_57, Commandaria_21, DonaldDuck_56, Fury_26, GMA3_38, Gazebo_56, Gibbles_47, HubbaBubba_17, Hum25_55, Hyperion_57, IDyn_19, Indlulamithi_73, Jehoshaphat_58, Judebell_59, Kampe_49, Kyva_59, Leopard_104, Llemily_56, Lonelysoil_55, Marietta_20, Mashley_56, NadineRae_18, Namago_57, Onyinye_105, Orchid_48, PatrickStar_49, Phabia_56, Pitbull_58, Pleakley_26,

Quammi_54, RobinSparkles_52, Rudy_54, Sillytadpoles_57, Squash_61, StrawberryJamm_60, Sukkupi_20, Teehee_57, Viceroy_55, Wayne3_58, Wheelie_56, WhoseManz_20, Wollypog_81, Yndexa_20, Zagie_57, Zhafia_59,

Summary by start number:

Start 27:

- Found in 1 of 92 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlulamithi_73 (AC),

Start 28:

- Found in 2 of 92 (2.2%) of genes in pham
- Manual Annotations of this start: 2 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fury_26 (CR5), Pleakley_26 (CR5),

Start 30:

- Found in 3 of 92 (3.3%) of genes in pham
- Manual Annotations of this start: 3 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikoy_106 (AE), Leopard_104 (AE), Onyinye_105 (AE),

Start 31:

- Found in 1 of 92 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Wollypog_81 (singleton),

Start 38:

- Found in 1 of 92 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Magritte_49 (singleton),

Start 42:

- Found in 1 of 92 (1.1%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA3_38 (DF2),

Start 46:

- Found in 9 of 92 (9.8%) of genes in pham
- Manual Annotations of this start: 8 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BiPauneto_21 (CR4), Commandaria_21 (CR2), HubbaBubba_17 (CR4), IDyn_19 (CR4), Marietta_20 (CR4), NadineRae_18 (CR4), Sukkupi_20 (CR4), WhoseManz_20 (CR4), Yndexa_20 (CR4),

Start 47:

- Found in 41 of 92 (44.6%) of genes in pham

- Manual Annotations of this start: 26 of 68
- Called 97.6% of time when present
- Phage (with cluster) where this start called: ASerpRocky_45 (CS4), Aikyam_83 (AY), Anekin_85 (AY), Apiary_21 (CR), Auxilium_82 (AY), BenchScraper_81 (AY), Benczkowski14_45 (CS4), BillyTP_83 (AY), Braxoaddie_21 (CR), CoffeeBean_21 (CR), CookieBear_81 (AY), Demosthenes_44 (CS4), EvePickles_85 (AY), Faja_86 (AY), Globfish_82 (AY), Gorpy_82 (AY), GuyFagieri_20 (CR), Hestia_78 (AY), Hillester_88 (AY), Hollow_46 (CS4), Isolde_85 (AY), Katyusha_45 (CS4), Kvothe_45 (CS4), MacGully_24 (CR), Maselop_21 (CR), MidnightRain_90 (AY), Niagara_45 (CS4), Philon9_46 (CS4), Phrank15_92 (AY), Polyuyki_21 (CR), RadFad_89 (AY), Raphaella_82 (AY), Richie_87 (AY), Sakai_81 (AY), Seahorse_91 (AY), Teatealatte_46 (CS4), Teech_46 (CS4), Tiff81_84 (AY), Tredge_46 (CS4), YoungHarleezy_83 (AY),

Start 49:

- Found in 2 of 92 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Cantare_51 (singleton),

Start 55:

- Found in 2 of 92 (2.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hum25_55 (FQ), Pitbull_58 (FQ),

Start 62:

- Found in 27 of 92 (29.3%) of genes in pham
- Manual Annotations of this start: 6 of 68
- Called 29.6% of time when present
- Phage (with cluster) where this start called: AluminumJesus_53 (EG), Blab_55 (EG), Jehoshaphat_58 (EG), Llemily_56 (EG), Phabia_56 (EG), Rudy_54 (EG), StrawberryJamm_60 (EG), Zhafia_59 (EG),

Start 63:

- Found in 36 of 92 (39.1%) of genes in pham
- Manual Annotations of this start: 14 of 68
- Called 50.0% of time when present
- Phage (with cluster) where this start called: BabyDotz_57 (EG), Casend_57 (EG), DonaldDuck_56 (EG), Gazebo_56 (EG), Hyperion_57 (EG), Judebell_59 (EG), Kyva_59 (EG), Lonelysoil_55 (EG), Mashley_56 (EG), Namago_57 (EG), Quammi_54 (EG), Sillytadpoles_57 (EG), Squash_61 (EG), Teehee_57 (EG), Viceroy_55 (EG), Wayne3_58 (EG), Wheelie_56 (EG), Zagie_57 (EG),

Start 64:

- Found in 6 of 92 (6.5%) of genes in pham
- Manual Annotations of this start: 5 of 68
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Gibbles_47 (CX), Kampe_49 (CX), Orchid_48 (CX), PatrickStar_49 (CX), RobinSparkles_52 (CX),

Summary by clusters:

There are 13 clusters represented in this pham: CR2, FQ, AC, AE, CR4, CR5, EG, singleton, DF2, CX, CR, AY, CS4,

Info for manual annotations of cluster AC:

- Start number 27 was manually annotated 1 time for cluster AC.

Info for manual annotations of cluster AE:

- Start number 30 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster AY:

- Start number 47 was manually annotated 11 times for cluster AY.

Info for manual annotations of cluster CR:

- Start number 47 was manually annotated 6 times for cluster CR.

Info for manual annotations of cluster CR2:

- Start number 46 was manually annotated 1 time for cluster CR2.

Info for manual annotations of cluster CR4:

- Start number 46 was manually annotated 7 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 28 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CS4:

- Start number 47 was manually annotated 9 times for cluster CS4.

Info for manual annotations of cluster CX:

- Start number 64 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster EG:

- Start number 62 was manually annotated 6 times for cluster EG.
- Start number 63 was manually annotated 14 times for cluster EG.

Gene Information:

Gene: ASerpRocky_45 Start: 46949, Stop: 46455, Start Num: 47

Candidate Starts for ASerpRocky_45:

(Start: 47 @46949 has 26 MA's), (52, 46934), (59, 46907), (72, 46841), (115, 46658), (124, 46619),

Gene: Aikoy_106 Start: 67335, Stop: 67865, Start Num: 30

Candidate Starts for Aikoy_106:

(Start: 30 @67335 has 3 MA's), (35, 67362), (44, 67401), (50, 67422), (56, 67443), (67, 67494), (68, 67503), (69, 67512), (71, 67515), (75, 67527), (84, 67566), (85, 67569), (99, 67635), (100, 67638), (101, 67650), (102, 67653), (104, 67665), (105, 67668), (107, 67674), (111, 67686),

Gene: Aikyam_83 Start: 45953, Stop: 46399, Start Num: 47

Candidate Starts for Aikyam_83:

(36, 45908), (Start: 47 @45953 has 26 MA's), (73, 46055), (132, 46286),

Gene: AluminumJesus_53 Start: 41962, Stop: 41567, Start Num: 62
Candidate Starts for AluminumJesus_53:
(Start: 62 @41962 has 6 MA's), (Start: 63 @41959 has 14 MA's), (69, 41917), (80, 41875), (97, 41794),

Gene: Anekin_85 Start: 48188, Stop: 48622, Start Num: 47
Candidate Starts for Anekin_85:
(20, 48032), (Start: 47 @48188 has 26 MA's), (81, 48305), (118, 48443), (132, 48509), (142, 48578),

Gene: Apiary_21 Start: 10881, Stop: 11363, Start Num: 47
Candidate Starts for Apiary_21:
(1, 10119), (6, 10371), (12, 10587), (34, 10830), (Start: 47 @10881 has 26 MA's), (61, 10926), (65, 10944), (70, 10980), (93, 11076), (103, 11121), (124, 11196), (132, 11241), (139, 11301),

Gene: Auxilium_82 Start: 45357, Stop: 45833, Start Num: 47
Candidate Starts for Auxilium_82:
(29, 45273), (Start: 47 @45357 has 26 MA's), (81, 45474), (113, 45618), (132, 45720),

Gene: BabyDotz_57 Start: 43429, Stop: 43037, Start Num: 63
Candidate Starts for BabyDotz_57:
(44, 43498), (Start: 62 @43432 has 6 MA's), (Start: 63 @43429 has 14 MA's), (69, 43387), (80, 43345), (97, 43264), (108, 43219), (144, 43045),

Gene: BenchScraper_81 Start: 46314, Stop: 46808, Start Num: 47
Candidate Starts for BenchScraper_81:
(Start: 47 @46314 has 26 MA's), (91, 46491), (94, 46500), (128, 46671),

Gene: Benczkowski14_45 Start: 47238, Stop: 46744, Start Num: 47
Candidate Starts for Benczkowski14_45:
(Start: 47 @47238 has 26 MA's), (52, 47223), (59, 47196), (115, 46947), (123, 46917), (124, 46908), (131, 46866), (133, 46860),

Gene: BiPauneto_21 Start: 8586, Stop: 9044, Start Num: 46
Candidate Starts for BiPauneto_21:
(3, 7887), (11, 8232), (Start: 46 @8586 has 8 MA's), (58, 8634), (Start: 63 @8652 has 14 MA's), (66, 8667), (70, 8700), (88, 8775), (90, 8787), (131, 8916),

Gene: BillyTP_83 Start: 48420, Stop: 48914, Start Num: 47
Candidate Starts for BillyTP_83:
(Start: 47 @48420 has 26 MA's), (91, 48597), (94, 48606), (128, 48777),

Gene: Blab_55 Start: 42584, Stop: 42189, Start Num: 62
Candidate Starts for Blab_55:
(44, 42650), (Start: 62 @42584 has 6 MA's), (Start: 63 @42581 has 14 MA's), (80, 42497), (97, 42416),

Gene: Braxoaddie_21 Start: 10869, Stop: 11351, Start Num: 47
Candidate Starts for Braxoaddie_21:
(1, 10107), (6, 10359), (12, 10575), (34, 10818), (Start: 47 @10869 has 26 MA's), (61, 10914), (65, 10932), (70, 10968), (93, 11064), (103, 11109), (124, 11184), (132, 11229), (139, 11289),

Gene: Cantare_51 Start: 46110, Stop: 46487, Start Num: 49

Candidate Starts for Cantare_51:

(Start: 49 @46110 has 1 MA's), (51, 46116), (53, 46119), (98, 46278), (119, 46380), (125, 46407), (130, 46437), (136, 46467),

Gene: Casend_57 Start: 42837, Stop: 42448, Start Num: 63

Candidate Starts for Casend_57:

(Start: 62 @42840 has 6 MA's), (Start: 63 @42837 has 14 MA's), (69, 42798), (97, 42675), (108, 42630), (144, 42456),

Gene: CoffeeBean_21 Start: 10806, Stop: 11321, Start Num: 47

Candidate Starts for CoffeeBean_21:

(1, 10044), (4, 10155), (6, 10296), (12, 10512), (34, 10755), (Start: 47 @10806 has 26 MA's), (61, 10851), (65, 10869), (70, 10905), (93, 11001), (121, 11136), (132, 11199), (139, 11259),

Gene: Commandaria_21 Start: 9793, Stop: 10248, Start Num: 46

Candidate Starts for Commandaria_21:

(2, 9061), (5, 9148), (9, 9418), (14, 9520), (Start: 46 @9793 has 8 MA's), (Start: 63 @9856 has 14 MA's), (66, 9871), (88, 9979), (131, 10120),

Gene: CookieBear_81 Start: 46991, Stop: 47392, Start Num: 47

Candidate Starts for CookieBear_81:

(Start: 47 @46991 has 26 MA's), (132, 47279), (143, 47372),

Gene: Demosthenes_44 Start: 46925, Stop: 46431, Start Num: 47

Candidate Starts for Demosthenes_44:

(Start: 47 @46925 has 26 MA's), (59, 46883), (72, 46817), (115, 46634), (124, 46595), (133, 46547), (139, 46490), (143, 46451),

Gene: DonaldDuck_56 Start: 42186, Stop: 41797, Start Num: 63

Candidate Starts for DonaldDuck_56:

(Start: 62 @42189 has 6 MA's), (Start: 63 @42186 has 14 MA's), (69, 42147), (97, 42024), (108, 41979), (144, 41805),

Gene: EvePickles_85 Start: 48837, Stop: 49178, Start Num: 47

Candidate Starts for EvePickles_85:

(24, 48729), (Start: 47 @48837 has 26 MA's), (73, 48939), (78, 48957), (82, 48966), (91, 49014), (114, 49107), (128, 49143),

Gene: Faja_86 Start: 48359, Stop: 48745, Start Num: 47

Candidate Starts for Faja_86:

(16, 48092), (18, 48134), (Start: 47 @48359 has 26 MA's), (94, 48506), (96, 48518), (117, 48587), (132, 48632),

Gene: Fury_26 Start: 10463, Stop: 10972, Start Num: 28

Candidate Starts for Fury_26:

(Start: 28 @10463 has 2 MA's), (Start: 63 @10580 has 14 MA's), (66, 10595), (91, 10718), (94, 10727), (131, 10844), (134, 10856),

Gene: GMA3_38 Start: 40837, Stop: 40325, Start Num: 42

Candidate Starts for GMA3_38:

(25, 40918), (39, 40849), (42, 40837), (80, 40669), (93, 40609), (138, 40390),

Gene: Gazebo_56 Start: 42670, Stop: 42278, Start Num: 63

Candidate Starts for Gazebo_56:

(Start: 62 @42673 has 6 MA's), (Start: 63 @42670 has 14 MA's), (69, 42628), (97, 42505), (108, 42460), (144, 42286), (145, 42283),

Gene: Gibbles_47 Start: 45170, Stop: 44748, Start Num: 64

Candidate Starts for Gibbles_47:

(Start: 64 @45170 has 5 MA's), (69, 45134), (82, 45095), (83, 45089), (87, 45074), (106, 44984), (134, 44855), (139, 44810), (144, 44756),

Gene: Globfish_82 Start: 46114, Stop: 46545, Start Num: 47

Candidate Starts for Globfish_82:

(8, 45718), (13, 45799), (17, 45883), (Start: 47 @46114 has 26 MA's), (128, 46408),

Gene: Gorpy_82 Start: 48333, Stop: 48809, Start Num: 47

Candidate Starts for Gorpy_82:

(Start: 47 @48333 has 26 MA's), (81, 48450), (112, 48591), (120, 48630), (128, 48672), (132, 48696), (143, 48789),

Gene: GuyFagieri_20 Start: 10423, Stop: 10938, Start Num: 47

Candidate Starts for GuyFagieri_20:

(6, 9913), (7, 9994), (12, 10129), (Start: 47 @10423 has 26 MA's), (65, 10486), (93, 10618), (95, 10630), (122, 10759), (132, 10816), (139, 10876),

Gene: Hestia_78 Start: 45289, Stop: 45783, Start Num: 47

Candidate Starts for Hestia_78:

(37, 45244), (Start: 47 @45289 has 26 MA's), (91, 45466), (94, 45475), (128, 45646),

Gene: Hillester_88 Start: 48096, Stop: 48530, Start Num: 47

Candidate Starts for Hillester_88:

(Start: 47 @48096 has 26 MA's), (81, 48213), (118, 48351), (132, 48417), (142, 48486),

Gene: Hollow_46 Start: 47574, Stop: 47080, Start Num: 47

Candidate Starts for Hollow_46:

(Start: 47 @47574 has 26 MA's), (52, 47559), (59, 47532), (72, 47466), (115, 47283), (124, 47244), (133, 47196),

Gene: HubbaBubba_17 Start: 7112, Stop: 7570, Start Num: 46

Candidate Starts for HubbaBubba_17:

(11, 6758), (Start: 46 @7112 has 8 MA's), (58, 7160), (Start: 63 @7178 has 14 MA's), (66, 7193), (70, 7226), (88, 7301), (131, 7442), (144, 7562),

Gene: Hum25_55 Start: 34774, Stop: 35166, Start Num: 55

Candidate Starts for Hum25_55:

(36, 34702), (55, 34774), (59, 34792), (70, 34855), (91, 34930), (131, 35050), (132, 35053), (134, 35062),

Gene: Hyperion_57 Start: 42845, Stop: 42456, Start Num: 63

Candidate Starts for Hyperion_57:

(44, 42914), (Start: 62 @42848 has 6 MA's), (Start: 63 @42845 has 14 MA's), (80, 42764), (97, 42683), (144, 42464),

Gene: IDyn_19 Start: 8503, Stop: 8961, Start Num: 46

Candidate Starts for IDyn_19:

(11, 8149), (Start: 46 @8503 has 8 MA's), (58, 8551), (Start: 63 @8569 has 14 MA's), (66, 8584), (70, 8617), (77, 8635), (88, 8692), (131, 8833),

Gene: Indlulamithi_73 Start: 51686, Stop: 52294, Start Num: 27

Candidate Starts for Indlulamithi_73:

(Start: 27 @51686 has 1 MA's), (29, 51707), (40, 51758), (Start: 49 @51800 has 1 MA's), (Start: 64 @51857 has 5 MA's), (76, 51911), (79, 51926), (85, 51947), (86, 51950), (89, 51974), (90, 51977), (126, 52136), (130, 52166), (135, 52190), (140, 52235), (144, 52286),

Gene: Isolde_85 Start: 48621, Stop: 49019, Start Num: 47

Candidate Starts for Isolde_85:

(19, 48438), (Start: 47 @48621 has 26 MA's), (94, 48768), (117, 48849), (132, 48906),

Gene: Jehoshaphat_58 Start: 43108, Stop: 42716, Start Num: 62

Candidate Starts for Jehoshaphat_58:

(Start: 62 @43108 has 6 MA's), (Start: 63 @43105 has 14 MA's), (69, 43066), (97, 42943), (108, 42898), (144, 42724),

Gene: Judebell_59 Start: 42554, Stop: 42165, Start Num: 63

Candidate Starts for Judebell_59:

(48, 42605), (Start: 62 @42557 has 6 MA's), (Start: 63 @42554 has 14 MA's), (69, 42515), (80, 42473), (97, 42392), (108, 42347), (144, 42173),

Gene: Kampe_49 Start: 45153, Stop: 44731, Start Num: 64

Candidate Starts for Kampe_49:

(Start: 64 @45153 has 5 MA's), (69, 45117), (82, 45078), (83, 45072), (87, 45057), (106, 44967), (139, 44793),

Gene: Katyusha_45 Start: 47238, Stop: 46744, Start Num: 47

Candidate Starts for Katyusha_45:

(Start: 47 @47238 has 26 MA's), (52, 47223), (59, 47196), (115, 46947), (123, 46917), (124, 46908), (131, 46866), (133, 46860),

Gene: Kvothe_45 Start: 47137, Stop: 46643, Start Num: 47

Candidate Starts for Kvothe_45:

(Start: 47 @47137 has 26 MA's), (52, 47122), (59, 47095), (123, 46816), (124, 46807), (131, 46765), (133, 46759),

Gene: Kyva_59 Start: 43089, Stop: 42700, Start Num: 63

Candidate Starts for Kyva_59:

(10, 43476), (22, 43245), (32, 43185), (33, 43182), (45, 43152), (Start: 62 @43092 has 6 MA's), (Start: 63 @43089 has 14 MA's), (97, 42927), (108, 42882), (144, 42708), (145, 42705),

Gene: Leopard_104 Start: 67266, Stop: 67778, Start Num: 30

Candidate Starts for Leopard_104:

(Start: 30 @67266 has 3 MA's), (35, 67293), (56, 67374), (67, 67425), (68, 67434), (69, 67443), (71, 67446), (84, 67497), (85, 67500), (99, 67566), (100, 67569), (101, 67581), (105, 67584), (107, 67590), (111, 67599),

Gene: Llemily_56 Start: 41884, Stop: 41492, Start Num: 62

Candidate Starts for Llemily_56:

(Start: 62 @41884 has 6 MA's), (Start: 63 @41881 has 14 MA's), (69, 41842), (97, 41719), (108, 41674), (144, 41500),

Gene: Lonelysoil_55 Start: 42037, Stop: 41648, Start Num: 63

Candidate Starts for Lonelysoil_55:

(48, 42088), (Start: 62 @42040 has 6 MA's), (Start: 63 @42037 has 14 MA's), (69, 41998), (80, 41956), (97, 41875), (108, 41830), (144, 41656),

Gene: MacGully_24 Start: 10356, Stop: 10865, Start Num: 47

Candidate Starts for MacGully_24:

(4, 9750), (12, 10098), (15, 10137), (Start: 47 @10356 has 26 MA's), (93, 10551), (120, 10677), (127, 10704), (137, 10785), (141, 10815),

Gene: Magritte_49 Start: 48175, Stop: 48675, Start Num: 38

Candidate Starts for Magritte_49:

(Start: 38 @48175 has 1 MA's), (Start: 47 @48214 has 26 MA's), (53, 48229), (68, 48301), (91, 48409), (110, 48493), (136, 48571),

Gene: Marietta_20 Start: 8429, Stop: 8887, Start Num: 46

Candidate Starts for Marietta_20:

(11, 8075), (Start: 46 @8429 has 8 MA's), (58, 8477), (Start: 63 @8495 has 14 MA's), (66, 8510), (70, 8543), (77, 8561), (88, 8618), (144, 8879),

Gene: Maselop_21 Start: 10882, Stop: 11397, Start Num: 47

Candidate Starts for Maselop_21:

(1, 10120), (6, 10372), (12, 10588), (34, 10831), (Start: 47 @10882 has 26 MA's), (61, 10927), (65, 10945), (70, 10981), (93, 11077), (121, 11212), (132, 11275), (139, 11335),

Gene: Mashley_56 Start: 42624, Stop: 42232, Start Num: 63

Candidate Starts for Mashley_56:

(21, 42828), (44, 42693), (Start: 62 @42627 has 6 MA's), (Start: 63 @42624 has 14 MA's), (69, 42582), (80, 42540), (97, 42459), (108, 42414), (144, 42240),

Gene: MidnightRain_90 Start: 48881, Stop: 49366, Start Num: 47

Candidate Starts for MidnightRain_90:

(Start: 47 @48881 has 26 MA's), (91, 49058), (94, 49067), (128, 49229),

Gene: NadineRae_18 Start: 7679, Stop: 8137, Start Num: 46

Candidate Starts for NadineRae_18:

(11, 7325), (Start: 46 @7679 has 8 MA's), (58, 7727), (Start: 63 @7745 has 14 MA's), (66, 7760), (70, 7793), (77, 7811), (88, 7868), (92, 7886), (131, 8009), (144, 8129),

Gene: Namago_57 Start: 42027, Stop: 41638, Start Num: 63

Candidate Starts for Namago_57:

(48, 42078), (Start: 62 @42030 has 6 MA's), (Start: 63 @42027 has 14 MA's), (69, 41988), (80, 41946), (97, 41865), (108, 41820), (144, 41646), (145, 41643),

Gene: Niagara_45 Start: 47216, Stop: 46722, Start Num: 47

Candidate Starts for Niagara_45:

(Start: 47 @47216 has 26 MA's), (52, 47201), (59, 47174), (123, 46895), (124, 46886), (131, 46844), (133, 46838),

Gene: Onyinye_105 Start: 67128, Stop: 67658, Start Num: 30

Candidate Starts for Onyinye_105:

(Start: 30 @67128 has 3 MA's), (35, 67155), (44, 67194), (50, 67215), (56, 67236), (67, 67287), (68, 67296), (69, 67305), (71, 67308), (75, 67320), (84, 67359), (85, 67362), (99, 67428), (100, 67431), (101, 67443), (102, 67446), (104, 67458), (105, 67461), (107, 67467), (111, 67479),

Gene: Orchid_48 Start: 45154, Stop: 44732, Start Num: 64

Candidate Starts for Orchid_48:

(Start: 64 @45154 has 5 MA's), (69, 45118), (82, 45079), (83, 45073), (87, 45058), (106, 44968), (139, 44794),

Gene: PatrickStar_49 Start: 45153, Stop: 44731, Start Num: 64

Candidate Starts for PatrickStar_49:

(Start: 64 @45153 has 5 MA's), (69, 45117), (82, 45078), (83, 45072), (87, 45057), (106, 44967), (139, 44793),

Gene: Phabia_56 Start: 42299, Stop: 41907, Start Num: 62

Candidate Starts for Phabia_56:

(Start: 62 @42299 has 6 MA's), (Start: 63 @42296 has 14 MA's), (69, 42257), (97, 42134), (108, 42089), (144, 41915),

Gene: Philon9_46 Start: 48247, Stop: 47753, Start Num: 47

Candidate Starts for Philon9_46:

(Start: 47 @48247 has 26 MA's), (Start: 62 @48193 has 6 MA's), (72, 48139), (95, 48037), (124, 47917),

Gene: Phrank15_92 Start: 48788, Stop: 49189, Start Num: 47

Candidate Starts for Phrank15_92:

(Start: 47 @48788 has 26 MA's), (132, 49076), (143, 49169),

Gene: Pitbull_58 Start: 33633, Stop: 34013, Start Num: 55

Candidate Starts for Pitbull_58:

(54, 33630), (55, 33633), (59, 33651), (74, 33717), (91, 33777), (94, 33786), (131, 33897), (132, 33900),

Gene: Pleakley_26 Start: 10464, Stop: 10973, Start Num: 28

Candidate Starts for Pleakley_26:

(Start: 28 @10464 has 2 MA's), (Start: 63 @10581 has 14 MA's), (66, 10596), (91, 10719), (94, 10728), (131, 10845), (134, 10857),

Gene: Polyzuki_21 Start: 10892, Stop: 11374, Start Num: 47

Candidate Starts for Polyzuki_21:

(1, 10130), (6, 10382), (12, 10598), (34, 10841), (Start: 47 @10892 has 26 MA's), (61, 10937), (65, 10955), (70, 10991), (93, 11087), (103, 11132), (124, 11207), (132, 11252), (139, 11312),

Gene: Quammi_54 Start: 41996, Stop: 41607, Start Num: 63

Candidate Starts for Quammi_54:

(Start: 62 @41999 has 6 MA's), (Start: 63 @41996 has 14 MA's), (69, 41957), (97, 41834), (108, 41789), (144, 41615),

Gene: RadFad_89 Start: 48096, Stop: 48530, Start Num: 47

Candidate Starts for RadFad_89:

(Start: 47 @48096 has 26 MA's), (81, 48213), (118, 48351), (132, 48417), (142, 48486),

Gene: Raphaella_82 Start: 46653, Stop: 47147, Start Num: 47

Candidate Starts for Raphaella_82:
(16, 46386), (18, 46428), (Start: 47 @46653 has 26 MA's), (91, 46830), (94, 46839), (128, 47010),

Gene: Richie_87 Start: 48886, Stop: 49380, Start Num: 47
Candidate Starts for Richie_87:
(Start: 47 @48886 has 26 MA's), (91, 49063), (94, 49072), (128, 49243),

Gene: RobinSparkles_52 Start: 45706, Stop: 45284, Start Num: 64
Candidate Starts for RobinSparkles_52:
(Start: 64 @45706 has 5 MA's), (69, 45670), (82, 45631), (83, 45625), (87, 45610), (106, 45520), (139, 45346),

Gene: Rudy_54 Start: 42035, Stop: 41643, Start Num: 62
Candidate Starts for Rudy_54:
(Start: 62 @42035 has 6 MA's), (Start: 63 @42032 has 14 MA's), (69, 41993), (97, 41870), (108, 41825), (144, 41651),

Gene: Sakai_81 Start: 47044, Stop: 47520, Start Num: 47
Candidate Starts for Sakai_81:
(Start: 47 @47044 has 26 MA's), (81, 47161), (112, 47302), (120, 47341), (128, 47383), (132, 47407), (143, 47500),

Gene: Seahorse_91 Start: 52291, Stop: 52725, Start Num: 47
Candidate Starts for Seahorse_91:
(17, 52063), (Start: 47 @52291 has 26 MA's), (128, 52588), (132, 52612),

Gene: Sillytadpoles_57 Start: 41869, Stop: 41480, Start Num: 63
Candidate Starts for Sillytadpoles_57:
(Start: 62 @41872 has 6 MA's), (Start: 63 @41869 has 14 MA's), (69, 41830), (97, 41707), (108, 41662), (144, 41488),

Gene: Squash_61 Start: 43540, Stop: 43148, Start Num: 63
Candidate Starts for Squash_61:
(44, 43609), (Start: 62 @43543 has 6 MA's), (Start: 63 @43540 has 14 MA's), (69, 43498), (80, 43456), (97, 43375), (108, 43330),

Gene: StrawberryJamm_60 Start: 42333, Stop: 41941, Start Num: 62
Candidate Starts for StrawberryJamm_60:
(60, 42336), (Start: 62 @42333 has 6 MA's), (69, 42291), (80, 42249), (97, 42168), (108, 42123), (144, 41949), (145, 41946),

Gene: Sukkupi_20 Start: 8477, Stop: 8935, Start Num: 46
Candidate Starts for Sukkupi_20:
(3, 7778), (11, 8123), (Start: 46 @8477 has 8 MA's), (58, 8525), (Start: 63 @8543 has 14 MA's), (66, 8558), (70, 8591), (88, 8666), (90, 8678), (131, 8807),

Gene: Teatealatte_46 Start: 47140, Stop: 46646, Start Num: 47
Candidate Starts for Teatealatte_46:
(Start: 47 @47140 has 26 MA's), (52, 47125), (59, 47098), (123, 46819), (124, 46810), (131, 46768), (133, 46762),

Gene: Teech_46 Start: 46941, Stop: 46447, Start Num: 47
Candidate Starts for Teech_46:

(Start: 47 @46941 has 26 MA's), (52, 46926), (59, 46899), (123, 46620), (124, 46611), (131, 46569), (133, 46563),

Gene: Teehee_57 Start: 43102, Stop: 42713, Start Num: 63

Candidate Starts for Teehee_57:

(Start: 62 @43105 has 6 MA's), (Start: 63 @43102 has 14 MA's), (69, 43063), (97, 42940), (108, 42895), (144, 42721),

Gene: Tiff81_84 Start: 45794, Stop: 46192, Start Num: 47

Candidate Starts for Tiff81_84:

(16, 45527), (18, 45569), (Start: 47 @45794 has 26 MA's), (128, 46055), (132, 46079),

Gene: Tredge_46 Start: 47140, Stop: 46646, Start Num: 47

Candidate Starts for Tredge_46:

(Start: 47 @47140 has 26 MA's), (52, 47125), (59, 47098), (123, 46819), (124, 46810), (131, 46768), (133, 46762),

Gene: Viceroy_55 Start: 42002, Stop: 41613, Start Num: 63

Candidate Starts for Viceroy_55:

(Start: 62 @42005 has 6 MA's), (Start: 63 @42002 has 14 MA's), (69, 41963), (97, 41840), (108, 41795), (144, 41621),

Gene: Wayne3_58 Start: 42865, Stop: 42476, Start Num: 63

Candidate Starts for Wayne3_58:

(Start: 62 @42868 has 6 MA's), (Start: 63 @42865 has 14 MA's), (69, 42826), (97, 42703), (108, 42658), (144, 42484),

Gene: Wheelie_56 Start: 42186, Stop: 41797, Start Num: 63

Candidate Starts for Wheelie_56:

(Start: 62 @42189 has 6 MA's), (Start: 63 @42186 has 14 MA's), (69, 42147), (97, 42024), (108, 41979), (144, 41805),

Gene: WhoseManz_20 Start: 8040, Stop: 8498, Start Num: 46

Candidate Starts for WhoseManz_20:

(11, 7686), (Start: 46 @8040 has 8 MA's), (58, 8088), (Start: 63 @8106 has 14 MA's), (66, 8121), (70, 8154), (77, 8172), (88, 8229), (144, 8490),

Gene: Wollypog_81 Start: 56236, Stop: 56814, Start Num: 31

Candidate Starts for Wollypog_81:

(23, 56194), (26, 56209), (Start: 31 @56236 has 1 MA's), (41, 56284), (43, 56296), (57, 56350), (90, 56476), (94, 56488), (109, 56560), (116, 56605), (129, 56668), (130, 56674), (139, 56752), (143, 56791),

Gene: Yndexa_20 Start: 8477, Stop: 8935, Start Num: 46

Candidate Starts for Yndexa_20:

(3, 7778), (11, 8123), (Start: 46 @8477 has 8 MA's), (58, 8525), (Start: 63 @8543 has 14 MA's), (66, 8558), (70, 8591), (88, 8666), (90, 8678), (131, 8807),

Gene: YoungHarleezy_83 Start: 48259, Stop: 48660, Start Num: 47

Candidate Starts for YoungHarleezy_83:

(Start: 47 @48259 has 26 MA's), (132, 48547),

Gene: Zagie_57 Start: 42527, Stop: 42138, Start Num: 63

Candidate Starts for Zagie_57:

(48, 42578), (Start: 62 @42530 has 6 MA's), (Start: 63 @42527 has 14 MA's), (69, 42488), (80, 42446), (97, 42365), (108, 42320), (144, 42146),

Gene: Zhafia_59 Start: 42669, Stop: 42277, Start Num: 62

Candidate Starts for Zhafia_59:

(Start: 62 @42669 has 6 MA's), (Start: 63 @42666 has 14 MA's), (69, 42627), (97, 42504), (108, 42459), (144, 42285),