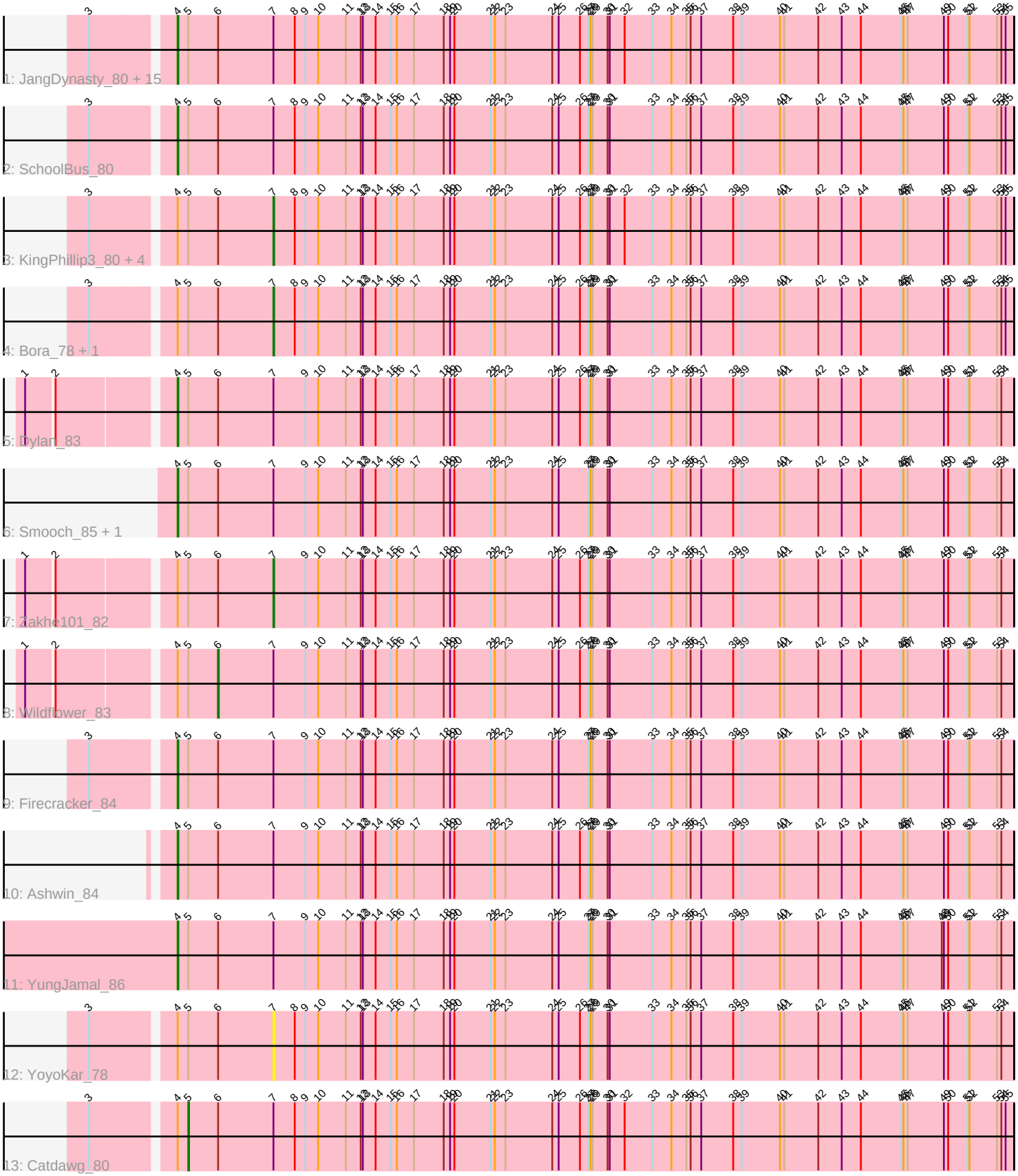
Pham 345963


1: JangDynasty_80 + 15
2: SchoolBus_80
3: KingPhillip3_80 + 4
4: Bora_78 + 1
5: Dylan_83
6: Smooch_85 + 1
7: Zakhe101_82
8: Wildflower_83
9: Firecracker_84
10: Ashwin_84
11: YungJamal_86
12: YoyoKar_78
13: Catdawg_80

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 345963 Report

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

Pham number 345963 has 34 members, 2 are drafts.

Phages represented in each track:
• Track 1 : JangDynasty_80, Blessica_81, Alkhayr_81, Idergollasper_80, Winget_81, Familton_81, Vorrps_81, Imara_81, NiebruSaylor_80, FoulBall_81, Vagabond_81, Murai_81, Shida_80, Schuy_82, Krili_80, TelAviv_77
• Track 2 : SchoolBus_80
• Track 3 : KingPhillip3_80, MadKillah_82, Wogge42_80, Ryadel_84, Mori_81
• Track 4 : Bora_78, Zebo_80
• Track 5 : Dylan_83
• Track 6 : Smooch_85, Corndog_84
• Track 7 : Zakhe101_82
• Track 8 : Wildflower_83
• Track 9 : Firecracker_84
• Track 10 : Ashwin_84
• Track 11 : YungJamal_86
• Track 12 : YoyoKar_78
• Track 13 : Catdawg_80

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

The start number called the most often in the published annotations is 4, it was called in 23 of the 32 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Alkhayr_81, Ashwin_84, Blessica_81, Corndog_84, Dylan_83, Familton_81, Firecracker_84, FoulBall_81, Idergollasper_80, Imara_81, JangDynasty_80, Krili_80, Murai_81, NiebruSaylor_80, SchoolBus_80, Schuy_82, Shida_80, Smooch_85, TelAviv_77, Vagabond_81, Vorrps_81, Winget_81, YungJamal_86,

Genes that have the "Most Annotated" start but do not call it:
• Bora_78, Catdawg_80, KingPhillip3_80, MadKillah_82, Mori_81, Ryadel_84, Wildflower_83, Wogge42_80, YoyoKar_78, Zakhe101_82, Zebo_80,

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

Summary by start number:

Start 4:
• Found in 34 of 34 (100.0%) of genes in pham
• Manual Annotations of this start: 23 of 32
• Called 67.6% of time when present
• Phage (with cluster) where this start called: Alkhayr_81 (O), Ashwin_84 (O), Blessica_81 (O), Corndog_84 (O), Dylan_83 (O), Familton_81 (O), Firecracker_84 (O), FoulBall_81 (O), Idergollasper_80 (O), Imara_81 (O), JangDynasty_80 (O), Krili_80 (O), Murai_81 (O), NiebruSaylor_80 (O), SchoolBus_80 (O), Schuy_82 (O), Shida_80 (O), Smooch_85 (O), TelAviv_77 (O), Vagabond_81 (O), Vorrps_81 (O), Winget_81 (O), YungJamal_86 (O),

Start 5:
• Found in 34 of 34 (100.0%) of genes in pham
• Manual Annotations of this start: 1 of 32
• Called 2.9% of time when present
• Phage (with cluster) where this start called: Catdawg_80 (O),

Start 6:
• Found in 34 of 34 (100.0%) of genes in pham
• Manual Annotations of this start: 1 of 32
• Called 2.9% of time when present
• Phage (with cluster) where this start called: Wildflower_83 (O),

Start 7:
• Found in 34 of 34 (100.0%) of genes in pham
• Manual Annotations of this start: 7 of 32
• Called 26.5% of time when present
• Phage (with cluster) where this start called: Bora_78 (O), KingPhillip3_80 (O), MadKillah_82 (O), Mori_81 (O), Ryadel_84 (O), Wogge42_80 (O), YoyoKar_78 (O), Zakhe101_82 (O), Zebo_80 (O),

Summary by clusters:

There is one cluster represented in this pham: O

Info for manual annotations of cluster O:
•Start number 4 was manually annotated 23 times for cluster O.
•Start number 5 was manually annotated 1 time for cluster O.
•Start number 6 was manually annotated 1 time for cluster O.
•Start number 7 was manually annotated 7 times for cluster O.

Gene Information:

Gene: Alkhayr_81 Start: 50951, Stop: 49773, Start Num: 4
Candidate Starts for Alkhayr_81:
(3, 51056), (Start: 4 @50951 has 23 MA's), (Start: 5 @50936 has 1 MA's), (Start: 6 @50894 has 1 MA's), (Start: 7 @50816 has 7 MA's), (8, 50786), (9, 50771), (10, 50753), (11, 50714), (12, 50693), (13, 50690), (14, 50672), (15, 50651), (16, 50642), (17, 50618), (18, 50576), (19, 50567), (20, 50561), (21, 50510), (22, 50504), (23, 50489), (24, 50423), (25, 50414), (26, 50384), (27, 50372), (28, 50369), (29,

50366), (30, 50345), (31, 50342), (32, 50321), (33, 50282), (34, 50255), (35, 50234), (36, 50228), (37, 50213), (38, 50168), (39, 50156), (40, 50102), (41, 50096), (42, 50048), (43, 50015), (44, 49988), (45, 49931), (46, 49928), (47, 49922), (49, 49871), (50, 49865), (51, 49838), (52, 49835), (53, 49796), (54, 49790), (55, 49784),

Gene: Ashwin_84 Start: 52708, Stop: 51530, Start Num: 4
Candidate Starts for Ashwin_84:
(Start: 4 @52708 has 23 MA's), (Start: 5 @52693 has 1 MA's), (Start: 6 @52651 has 1 MA's), (Start: 7 @52573 has 7 MA's), (9, 52528), (10, 52510), (11, 52471), (12, 52450), (13, 52447), (14, 52429), (15, 52408), (16, 52399), (17, 52375), (18, 52333), (19, 52324), (20, 52318), (21, 52267), (22, 52261), (23, 52246), (24, 52180), (25, 52171), (26, 52141), (27, 52129), (28, 52126), (29, 52123), (30, 52102), (31, 52099), (33, 52039), (34, 52012), (35, 51991), (36, 51985), (37, 51970), (38, 51925), (39, 51913), (40, 51859), (41, 51853), (42, 51805), (43, 51772), (44, 51745), (45, 51688), (46, 51685), (47, 51679), (49, 51628), (50, 51622), (51, 51595), (52, 51592), (53, 51553), (54, 51547),

Gene: Blessica_81 Start: 51499, Stop: 50321, Start Num: 4
Candidate Starts for Blessica_81:
(3, 51604), (Start: 4 @51499 has 23 MA's), (Start: 5 @51484 has 1 MA's), (Start: 6 @51442 has 1 MA's), (Start: 7 @51364 has 7 MA's), (8, 51334), (9, 51319), (10, 51301), (11, 51262), (12, 51241), (13, 51238), (14, 51220), (15, 51199), (16, 51190), (17, 51166), (18, 51124), (19, 51115), (20, 51109), (21, 51058), (22, 51052), (23, 51037), (24, 50971), (25, 50962), (26, 50932), (27, 50920), (28, 50917), (29, 50914), (30, 50893), (31, 50890), (32, 50869), (33, 50830), (34, 50803), (35, 50782), (36, 50776), (37, 50761), (38, 50716), (39, 50704), (40, 50650), (41, 50644), (42, 50596), (43, 50563), (44, 50536), (45, 50479), (46, 50476), (47, 50470), (49, 50419), (50, 50413), (51, 50386), (52, 50383), (53, 50344), (54, 50338), (55, 50332),

Gene: Bora_78 Start: 50745, Stop: 49702, Start Num: 7
Candidate Starts for Bora_78:
(3, 50985), (Start: 4 @50880 has 23 MA's), (Start: 5 @50865 has 1 MA's), (Start: 6 @50823 has 1 MA's), (Start: 7 @50745 has 7 MA's), (8, 50715), (9, 50700), (10, 50682), (11, 50643), (12, 50622), (13, 50619), (14, 50601), (15, 50580), (16, 50571), (17, 50547), (18, 50505), (19, 50496), (20, 50490), (21, 50439), (22, 50433), (23, 50418), (24, 50352), (25, 50343), (26, 50313), (27, 50301), (28, 50298), (29, 50295), (30, 50274), (31, 50271), (33, 50211), (34, 50184), (35, 50163), (36, 50157), (37, 50142), (38, 50097), (39, 50085), (40, 50031), (41, 50025), (42, 49977), (43, 49944), (44, 49917), (45, 49860), (46, 49857), (47, 49851), (49, 49800), (50, 49794), (51, 49767), (52, 49764), (53, 49725), (54, 49719), (55, 49713),

Gene: Catdawg_80 Start: 51220, Stop: 50057, Start Num: 5
Candidate Starts for Catdawg_80:
(3, 51340), (Start: 4 @51235 has 23 MA's), (Start: 5 @51220 has 1 MA's), (Start: 6 @51178 has 1 MA's), (Start: 7 @51100 has 7 MA's), (8, 51070), (9, 51055), (10, 51037), (11, 50998), (12, 50977), (13, 50974), (14, 50956), (15, 50935), (16, 50926), (17, 50902), (18, 50860), (19, 50851), (20, 50845), (21, 50794), (22, 50788), (23, 50773), (24, 50707), (25, 50698), (26, 50668), (27, 50656), (28, 50653), (29, 50650), (30, 50629), (31, 50626), (32, 50605), (33, 50566), (34, 50539), (35, 50518), (36, 50512), (37, 50497), (38, 50452), (39, 50440), (40, 50386), (41, 50380), (42, 50332), (43, 50299), (44, 50272), (45, 50215), (46, 50212), (47, 50206), (49, 50155), (50, 50149), (51, 50122), (52, 50119), (53, 50080), (54, 50074), (55, 50068),

Gene: Corndog_84 Start: 52290, Stop: 51112, Start Num: 4
Candidate Starts for Corndog_84:
(Start: 4 @52290 has 23 MA's), (Start: 5 @52275 has 1 MA's), (Start: 6 @52233 has 1 MA's), (Start: 7 @52155 has 7 MA's), (9, 52110), (10, 52092), (11, 52053), (12, 52032), (13, 52029), (14, 52011), (15, 51990), (16, 51981), (17, 51957), (18, 51915), (19, 51906), (20, 51900), (21, 51849), (22, 51843), (23,

51828), (24, 51762), (25, 51753), (27, 51711), (28, 51708), (29, 51705), (30, 51684), (31, 51681), (33, 51621), (34, 51594), (35, 51573), (36, 51567), (37, 51552), (38, 51507), (39, 51495), (40, 51441), (41, 51435), (42, 51387), (43, 51354), (44, 51327), (45, 51270), (46, 51267), (47, 51261), (49, 51210), (50, 51204), (51, 51177), (52, 51174), (53, 51135), (54, 51129),

Gene: Dylan_83 Start: 52424, Stop: 51246, Start Num: 4
Candidate Starts for Dylan_83:
(1, 52607), (2, 52571), (Start: 4 @52424 has 23 MA's), (Start: 5 @52409 has 1 MA's), (Start: 6 @52367 has 1 MA's), (Start: 7 @52289 has 7 MA's), (9, 52244), (10, 52226), (11, 52187), (12, 52166), (13, 52163), (14, 52145), (15, 52124), (16, 52115), (17, 52091), (18, 52049), (19, 52040), (20, 52034), (21, 51983), (22, 51977), (23, 51962), (24, 51896), (25, 51887), (26, 51857), (27, 51845), (28, 51842), (29, 51839), (30, 51818), (31, 51815), (33, 51755), (34, 51728), (35, 51707), (36, 51701), (37, 51686), (38, 51641), (39, 51629), (40, 51575), (41, 51569), (42, 51521), (43, 51488), (44, 51461), (45, 51404), (46, 51401), (47, 51395), (49, 51344), (50, 51338), (51, 51311), (52, 51308), (53, 51269), (54, 51263),

Gene: Familton_81 Start: 51192, Stop: 50014, Start Num: 4
Candidate Starts for Familton_81:
(3, 51297), (Start: 4 @51192 has 23 MA's), (Start: 5 @51177 has 1 MA's), (Start: 6 @51135 has 1 MA's), (Start: 7 @51057 has 7 MA's), (8, 51027), (9, 51012), (10, 50994), (11, 50955), (12, 50934), (13, 50931), (14, 50913), (15, 50892), (16, 50883), (17, 50859), (18, 50817), (19, 50808), (20, 50802), (21, 50751), (22, 50745), (23, 50730), (24, 50664), (25, 50655), (26, 50625), (27, 50613), (28, 50610), (29, 50607), (30, 50586), (31, 50583), (32, 50562), (33, 50523), (34, 50496), (35, 50475), (36, 50469), (37, 50454), (38, 50409), (39, 50397), (40, 50343), (41, 50337), (42, 50289), (43, 50256), (44, 50229), (45, 50172), (46, 50169), (47, 50163), (49, 50112), (50, 50106), (51, 50079), (52, 50076), (53, 50037), (54, 50031), (55, 50025),

Gene: Firecracker_84 Start: 52582, Stop: 51404, Start Num: 4
Candidate Starts for Firecracker_84:
(3, 52687), (Start: 4 @52582 has 23 MA's), (Start: 5 @52567 has 1 MA's), (Start: 6 @52525 has 1 MA's), (Start: 7 @52447 has 7 MA's), (9, 52402), (10, 52384), (11, 52345), (12, 52324), (13, 52321), (14, 52303), (15, 52282), (16, 52273), (17, 52249), (18, 52207), (19, 52198), (20, 52192), (21, 52141), (22, 52135), (23, 52120), (24, 52054), (25, 52045), (27, 52003), (28, 52000), (29, 51997), (30, 51976), (31, 51973), (33, 51913), (34, 51886), (35, 51865), (36, 51859), (37, 51844), (38, 51799), (39, 51787), (40, 51733), (41, 51727), (42, 51679), (43, 51646), (44, 51619), (45, 51562), (46, 51559), (47, 51553), (49, 51502), (50, 51496), (51, 51469), (52, 51466), (53, 51427), (54, 51421),

Gene: FoulBall_81 Start: 51234, Stop: 50056, Start Num: 4
Candidate Starts for FoulBall_81:
(3, 51339), (Start: 4 @51234 has 23 MA's), (Start: 5 @51219 has 1 MA's), (Start: 6 @51177 has 1 MA's), (Start: 7 @51099 has 7 MA's), (8, 51069), (9, 51054), (10, 51036), (11, 50997), (12, 50976), (13, 50973), (14, 50955), (15, 50934), (16, 50925), (17, 50901), (18, 50859), (19, 50850), (20, 50844), (21, 50793), (22, 50787), (23, 50772), (24, 50706), (25, 50697), (26, 50667), (27, 50655), (28, 50652), (29, 50649), (30, 50628), (31, 50625), (32, 50604), (33, 50565), (34, 50538), (35, 50517), (36, 50511), (37, 50496), (38, 50451), (39, 50439), (40, 50385), (41, 50379), (42, 50331), (43, 50298), (44, 50271), (45, 50214), (46, 50211), (47, 50205), (49, 50154), (50, 50148), (51, 50121), (52, 50118), (53, 50079), (54, 50073), (55, 50067),

Gene: Idergollasper_80 Start: 51186, Stop: 50008, Start Num: 4
Candidate Starts for Idergollasper_80:
(3, 51291), (Start: 4 @51186 has 23 MA's), (Start: 5 @51171 has 1 MA's), (Start: 6 @51129 has 1 MA's), (Start: 7 @51051 has 7 MA's), (8, 51021), (9, 51006), (10, 50988), (11, 50949), (12, 50928), (13, 50925), (14, 50907), (15, 50886), (16, 50877), (17, 50853), (18, 50811), (19, 50802), (20, 50796), (21, 50745), (22, 50739), (23, 50724), (24, 50658), (25, 50649), (26, 50619), (27, 50607), (28, 50604), (29,

50601), (30, 50580), (31, 50577), (32, 50556), (33, 50517), (34, 50490), (35, 50469), (36, 50463), (37, 50448), (38, 50403), (39, 50391), (40, 50337), (41, 50331), (42, 50283), (43, 50250), (44, 50223), (45, 50166), (46, 50163), (47, 50157), (49, 50106), (50, 50100), (51, 50073), (52, 50070), (53, 50031), (54, 50025), (55, 50019),

Gene: Imara_81 Start: 51037, Stop: 49859, Start Num: 4
Candidate Starts for Imara_81:
(3, 51142), (Start: 4 @51037 has 23 MA's), (Start: 5 @51022 has 1 MA's), (Start: 6 @50980 has 1 MA's), (Start: 7 @50902 has 7 MA's), (8, 50872), (9, 50857), (10, 50839), (11, 50800), (12, 50779), (13, 50776), (14, 50758), (15, 50737), (16, 50728), (17, 50704), (18, 50662), (19, 50653), (20, 50647), (21, 50596), (22, 50590), (23, 50575), (24, 50509), (25, 50500), (26, 50470), (27, 50458), (28, 50455), (29, 50452), (30, 50431), (31, 50428), (32, 50407), (33, 50368), (34, 50341), (35, 50320), (36, 50314), (37, 50299), (38, 50254), (39, 50242), (40, 50188), (41, 50182), (42, 50134), (43, 50101), (44, 50074), (45, 50017), (46, 50014), (47, 50008), (49, 49957), (50, 49951), (51, 49924), (52, 49921), (53, 49882), (54, 49876), (55, 49870),

Gene: JangDynasty_80 Start: 51253, Stop: 50075, Start Num: 4
Candidate Starts for JangDynasty_80:
(3, 51358), (Start: 4 @51253 has 23 MA's), (Start: 5 @51238 has 1 MA's), (Start: 6 @51196 has 1 MA's), (Start: 7 @51118 has 7 MA's), (8, 51088), (9, 51073), (10, 51055), (11, 51016), (12, 50995), (13, 50992), (14, 50974), (15, 50953), (16, 50944), (17, 50920), (18, 50878), (19, 50869), (20, 50863), (21, 50812), (22, 50806), (23, 50791), (24, 50725), (25, 50716), (26, 50686), (27, 50674), (28, 50671), (29, 50668), (30, 50647), (31, 50644), (32, 50623), (33, 50584), (34, 50557), (35, 50536), (36, 50530), (37, 50515), (38, 50470), (39, 50458), (40, 50404), (41, 50398), (42, 50350), (43, 50317), (44, 50290), (45, 50233), (46, 50230), (47, 50224), (49, 50173), (50, 50167), (51, 50140), (52, 50137), (53, 50098), (54, 50092), (55, 50086),

Gene: KingPhillip3_80 Start: 51066, Stop: 50023, Start Num: 7
Candidate Starts for KingPhillip3_80:
(3, 51306), (Start: 4 @51201 has 23 MA's), (Start: 5 @51186 has 1 MA's), (Start: 6 @51144 has 1 MA's), (Start: 7 @51066 has 7 MA's), (8, 51036), (9, 51021), (10, 51003), (11, 50964), (12, 50943), (13, 50940), (14, 50922), (15, 50901), (16, 50892), (17, 50868), (18, 50826), (19, 50817), (20, 50811), (21, 50760), (22, 50754), (23, 50739), (24, 50673), (25, 50664), (26, 50634), (27, 50622), (28, 50619), (29, 50616), (30, 50595), (31, 50592), (32, 50571), (33, 50532), (34, 50505), (35, 50484), (36, 50478), (37, 50463), (38, 50418), (39, 50406), (40, 50352), (41, 50346), (42, 50298), (43, 50265), (44, 50238), (45, 50181), (46, 50178), (47, 50172), (49, 50121), (50, 50115), (51, 50088), (52, 50085), (53, 50046), (54, 50040), (55, 50034),

Gene: Krili_80 Start: 50747, Stop: 49569, Start Num: 4
Candidate Starts for Krili_80:
(3, 50852), (Start: 4 @50747 has 23 MA's), (Start: 5 @50732 has 1 MA's), (Start: 6 @50690 has 1 MA's), (Start: 7 @50612 has 7 MA's), (8, 50582), (9, 50567), (10, 50549), (11, 50510), (12, 50489), (13, 50486), (14, 50468), (15, 50447), (16, 50438), (17, 50414), (18, 50372), (19, 50363), (20, 50357), (21, 50306), (22, 50300), (23, 50285), (24, 50219), (25, 50210), (26, 50180), (27, 50168), (28, 50165), (29, 50162), (30, 50141), (31, 50138), (32, 50117), (33, 50078), (34, 50051), (35, 50030), (36, 50024), (37, 50009), (38, 49964), (39, 49952), (40, 49898), (41, 49892), (42, 49844), (43, 49811), (44, 49784), (45, 49727), (46, 49724), (47, 49718), (49, 49667), (50, 49661), (51, 49634), (52, 49631), (53, 49592), (54, 49586), (55, 49580),

Gene: MadKillah_82 Start: 50881, Stop: 49838, Start Num: 7
Candidate Starts for MadKillah_82:
(3, 51121), (Start: 4 @51016 has 23 MA's), (Start: 5 @51001 has 1 MA's), (Start: 6 @50959 has 1 MA's), (Start: 7 @50881 has 7 MA's), (8, 50851), (9, 50836), (10, 50818), (11, 50779), (12, 50758), (13,

50755), (14, 50737), (15, 50716), (16, 50707), (17, 50683), (18, 50641), (19, 50632), (20, 50626), (21, 50575), (22, 50569), (23, 50554), (24, 50488), (25, 50479), (26, 50449), (27, 50437), (28, 50434), (29, 50431), (30, 50410), (31, 50407), (32, 50386), (33, 50347), (34, 50320), (35, 50299), (36, 50293), (37, 50278), (38, 50233), (39, 50221), (40, 50167), (41, 50161), (42, 50113), (43, 50080), (44, 50053), (45, 49996), (46, 49993), (47, 49987), (49, 49936), (50, 49930), (51, 49903), (52, 49900), (53, 49861), (54, 49855), (55, 49849),

Gene: Mori_81 Start: 51140, Stop: 50097, Start Num: 7
Candidate Starts for Mori_81:
(3, 51380), (Start: 4 @51275 has 23 MA's), (Start: 5 @51260 has 1 MA's), (Start: 6 @51218 has 1 MA's), (Start: 7 @51140 has 7 MA's), (8, 51110), (9, 51095), (10, 51077), (11, 51038), (12, 51017), (13, 51014), (14, 50996), (15, 50975), (16, 50966), (17, 50942), (18, 50900), (19, 50891), (20, 50885), (21, 50834), (22, 50828), (23, 50813), (24, 50747), (25, 50738), (26, 50708), (27, 50696), (28, 50693), (29, 50690), (30, 50669), (31, 50666), (32, 50645), (33, 50606), (34, 50579), (35, 50558), (36, 50552), (37, 50537), (38, 50492), (39, 50480), (40, 50426), (41, 50420), (42, 50372), (43, 50339), (44, 50312), (45, 50255), (46, 50252), (47, 50246), (49, 50195), (50, 50189), (51, 50162), (52, 50159), (53, 50120), (54, 50114), (55, 50108),

Gene: Murai_81 Start: 51408, Stop: 50230, Start Num: 4
Candidate Starts for Murai_81:
(3, 51513), (Start: 4 @51408 has 23 MA's), (Start: 5 @51393 has 1 MA's), (Start: 6 @51351 has 1 MA's), (Start: 7 @51273 has 7 MA's), (8, 51243), (9, 51228), (10, 51210), (11, 51171), (12, 51150), (13, 51147), (14, 51129), (15, 51108), (16, 51099), (17, 51075), (18, 51033), (19, 51024), (20, 51018), (21, 50967), (22, 50961), (23, 50946), (24, 50880), (25, 50871), (26, 50841), (27, 50829), (28, 50826), (29, 50823), (30, 50802), (31, 50799), (32, 50778), (33, 50739), (34, 50712), (35, 50691), (36, 50685), (37, 50670), (38, 50625), (39, 50613), (40, 50559), (41, 50553), (42, 50505), (43, 50472), (44, 50445), (45, 50388), (46, 50385), (47, 50379), (49, 50328), (50, 50322), (51, 50295), (52, 50292), (53, 50253), (54, 50247), (55, 50241),

Gene: NiebruSaylor_80 Start: 50666, Stop: 49488, Start Num: 4
Candidate Starts for NiebruSaylor_80:
(3, 50771), (Start: 4 @50666 has 23 MA's), (Start: 5 @50651 has 1 MA's), (Start: 6 @50609 has 1 MA's), (Start: 7 @50531 has 7 MA's), (8, 50501), (9, 50486), (10, 50468), (11, 50429), (12, 50408), (13, 50405), (14, 50387), (15, 50366), (16, 50357), (17, 50333), (18, 50291), (19, 50282), (20, 50276), (21, 50225), (22, 50219), (23, 50204), (24, 50138), (25, 50129), (26, 50099), (27, 50087), (28, 50084), (29, 50081), (30, 50060), (31, 50057), (32, 50036), (33, 49997), (34, 49970), (35, 49949), (36, 49943), (37, 49928), (38, 49883), (39, 49871), (40, 49817), (41, 49811), (42, 49763), (43, 49730), (44, 49703), (45, 49646), (46, 49643), (47, 49637), (49, 49586), (50, 49580), (51, 49553), (52, 49550), (53, 49511), (54, 49505), (55, 49499),

Gene: Ryadel_84 Start: 51887, Stop: 50844, Start Num: 7
Candidate Starts for Ryadel_84:
(3, 52127), (Start: 4 @52022 has 23 MA's), (Start: 5 @52007 has 1 MA's), (Start: 6 @51965 has 1 MA's), (Start: 7 @51887 has 7 MA's), (8, 51857), (9, 51842), (10, 51824), (11, 51785), (12, 51764), (13, 51761), (14, 51743), (15, 51722), (16, 51713), (17, 51689), (18, 51647), (19, 51638), (20, 51632), (21, 51581), (22, 51575), (23, 51560), (24, 51494), (25, 51485), (26, 51455), (27, 51443), (28, 51440), (29, 51437), (30, 51416), (31, 51413), (32, 51392), (33, 51353), (34, 51326), (35, 51305), (36, 51299), (37, 51284), (38, 51239), (39, 51227), (40, 51173), (41, 51167), (42, 51119), (43, 51086), (44, 51059), (45, 51002), (46, 50999), (47, 50993), (49, 50942), (50, 50936), (51, 50909), (52, 50906), (53, 50867), (54, 50861), (55, 50855),

Gene: SchoolBus_80 Start: 51170, Stop: 49992, Start Num: 4
Candidate Starts for SchoolBus_80:

(3, 51275), (Start: 4 @51170 has 23 MA's), (Start: 5 @51155 has 1 MA's), (Start: 6 @51113 has 1 MA's), (Start: 7 @51035 has 7 MA's), (8, 51005), (9, 50990), (10, 50972), (11, 50933), (12, 50912), (13, 50909), (14, 50891), (15, 50870), (16, 50861), (17, 50837), (18, 50795), (19, 50786), (20, 50780), (21, 50729), (22, 50723), (23, 50708), (24, 50642), (25, 50633), (26, 50603), (27, 50591), (28, 50588), (29, 50585), (30, 50564), (31, 50561), (33, 50501), (34, 50474), (35, 50453), (36, 50447), (37, 50432), (38, 50387), (39, 50375), (40, 50321), (41, 50315), (42, 50267), (43, 50234), (44, 50207), (45, 50150), (46, 50147), (47, 50141), (49, 50090), (50, 50084), (51, 50057), (52, 50054), (53, 50015), (54, 50009), (55, 50003),

Gene: Schuy_82 Start: 51019, Stop: 49841, Start Num: 4
Candidate Starts for Schuy_82:
(3, 51124), (Start: 4 @51019 has 23 MA's), (Start: 5 @51004 has 1 MA's), (Start: 6 @50962 has 1 MA's), (Start: 7 @50884 has 7 MA's), (8, 50854), (9, 50839), (10, 50821), (11, 50782), (12, 50761), (13, 50758), (14, 50740), (15, 50719), (16, 50710), (17, 50686), (18, 50644), (19, 50635), (20, 50629), (21, 50578), (22, 50572), (23, 50557), (24, 50491), (25, 50482), (26, 50452), (27, 50440), (28, 50437), (29, 50434), (30, 50413), (31, 50410), (32, 50389), (33, 50350), (34, 50323), (35, 50302), (36, 50296), (37, 50281), (38, 50236), (39, 50224), (40, 50170), (41, 50164), (42, 50116), (43, 50083), (44, 50056), (45, 49999), (46, 49996), (47, 49990), (49, 49939), (50, 49933), (51, 49906), (52, 49903), (53, 49864), (54, 49858), (55, 49852),

Gene: Shida_80 Start: 50859, Stop: 49681, Start Num: 4
Candidate Starts for Shida_80:
(3, 50964), (Start: 4 @50859 has 23 MA's), (Start: 5 @50844 has 1 MA's), (Start: 6 @50802 has 1 MA's), (Start: 7 @50724 has 7 MA's), (8, 50694), (9, 50679), (10, 50661), (11, 50622), (12, 50601), (13, 50598), (14, 50580), (15, 50559), (16, 50550), (17, 50526), (18, 50484), (19, 50475), (20, 50469), (21, 50418), (22, 50412), (23, 50397), (24, 50331), (25, 50322), (26, 50292), (27, 50280), (28, 50277), (29, 50274), (30, 50253), (31, 50250), (32, 50229), (33, 50190), (34, 50163), (35, 50142), (36, 50136), (37, 50121), (38, 50076), (39, 50064), (40, 50010), (41, 50004), (42, 49956), (43, 49923), (44, 49896), (45, 49839), (46, 49836), (47, 49830), (49, 49779), (50, 49773), (51, 49746), (52, 49743), (53, 49704), (54, 49698), (55, 49692),

Gene: Smooch_85 Start: 53923, Stop: 52745, Start Num: 4
Candidate Starts for Smooch_85:
(Start: 4 @53923 has 23 MA's), (Start: 5 @53908 has 1 MA's), (Start: 6 @53866 has 1 MA's), (Start: 7 @53788 has 7 MA's), (9, 53743), (10, 53725), (11, 53686), (12, 53665), (13, 53662), (14, 53644), (15, 53623), (16, 53614), (17, 53590), (18, 53548), (19, 53539), (20, 53533), (21, 53482), (22, 53476), (23, 53461), (24, 53395), (25, 53386), (27, 53344), (28, 53341), (29, 53338), (30, 53317), (31, 53314), (33, 53254), (34, 53227), (35, 53206), (36, 53200), (37, 53185), (38, 53140), (39, 53128), (40, 53074), (41, 53068), (42, 53020), (43, 52987), (44, 52960), (45, 52903), (46, 52900), (47, 52894), (49, 52843), (50, 52837), (51, 52810), (52, 52807), (53, 52768), (54, 52762),

Gene: TelAviv_77 Start: 51153, Stop: 49975, Start Num: 4
Candidate Starts for TelAviv_77:
(3, 51258), (Start: 4 @51153 has 23 MA's), (Start: 5 @51138 has 1 MA's), (Start: 6 @51096 has 1 MA's), (Start: 7 @51018 has 7 MA's), (8, 50988), (9, 50973), (10, 50955), (11, 50916), (12, 50895), (13, 50892), (14, 50874), (15, 50853), (16, 50844), (17, 50820), (18, 50778), (19, 50769), (20, 50763), (21, 50712), (22, 50706), (23, 50691), (24, 50625), (25, 50616), (26, 50586), (27, 50574), (28, 50571), (29, 50568), (30, 50547), (31, 50544), (32, 50523), (33, 50484), (34, 50457), (35, 50436), (36, 50430), (37, 50415), (38, 50370), (39, 50358), (40, 50304), (41, 50298), (42, 50250), (43, 50217), (44, 50190), (45, 50133), (46, 50130), (47, 50124), (49, 50073), (50, 50067), (51, 50040), (52, 50037), (53, 49998), (54, 49992), (55, 49986),

Gene: Vagabond_81 Start: 51067, Stop: 49889, Start Num: 4

Candidate Starts for Vagabond_81:
(3, 51172), (Start: 4 @51067 has 23 MA's), (Start: 5 @51052 has 1 MA's), (Start: 6 @51010 has 1 MA's), (Start: 7 @50932 has 7 MA's), (8, 50902), (9, 50887), (10, 50869), (11, 50830), (12, 50809), (13, 50806), (14, 50788), (15, 50767), (16, 50758), (17, 50734), (18, 50692), (19, 50683), (20, 50677), (21, 50626), (22, 50620), (23, 50605), (24, 50539), (25, 50530), (26, 50500), (27, 50488), (28, 50485), (29, 50482), (30, 50461), (31, 50458), (32, 50437), (33, 50398), (34, 50371), (35, 50350), (36, 50344), (37, 50329), (38, 50284), (39, 50272), (40, 50218), (41, 50212), (42, 50164), (43, 50131), (44, 50104), (45, 50047), (46, 50044), (47, 50038), (49, 49987), (50, 49981), (51, 49954), (52, 49951), (53, 49912), (54, 49906), (55, 49900),

Gene: Vorrps_81 Start: 51276, Stop: 50098, Start Num: 4
Candidate Starts for Vorrps_81:
(3, 51381), (Start: 4 @51276 has 23 MA's), (Start: 5 @51261 has 1 MA's), (Start: 6 @51219 has 1 MA's), (Start: 7 @51141 has 7 MA's), (8, 51111), (9, 51096), (10, 51078), (11, 51039), (12, 51018), (13, 51015), (14, 50997), (15, 50976), (16, 50967), (17, 50943), (18, 50901), (19, 50892), (20, 50886), (21, 50835), (22, 50829), (23, 50814), (24, 50748), (25, 50739), (26, 50709), (27, 50697), (28, 50694), (29, 50691), (30, 50670), (31, 50667), (32, 50646), (33, 50607), (34, 50580), (35, 50559), (36, 50553), (37, 50538), (38, 50493), (39, 50481), (40, 50427), (41, 50421), (42, 50373), (43, 50340), (44, 50313), (45, 50256), (46, 50253), (47, 50247), (49, 50196), (50, 50190), (51, 50163), (52, 50160), (53, 50121), (54, 50115), (55, 50109),

Gene: Wildflower_83 Start: 51957, Stop: 50836, Start Num: 6
Candidate Starts for Wildflower_83:
(1, 52197), (2, 52161), (Start: 4 @52014 has 23 MA's), (Start: 5 @51999 has 1 MA's), (Start: 6 @51957 has 1 MA's), (Start: 7 @51879 has 7 MA's), (9, 51834), (10, 51816), (11, 51777), (12, 51756), (13, 51753), (14, 51735), (15, 51714), (16, 51705), (17, 51681), (18, 51639), (19, 51630), (20, 51624), (21, 51573), (22, 51567), (23, 51552), (24, 51486), (25, 51477), (26, 51447), (27, 51435), (28, 51432), (29, 51429), (30, 51408), (31, 51405), (33, 51345), (34, 51318), (35, 51297), (36, 51291), (37, 51276), (38, 51231), (39, 51219), (40, 51165), (41, 51159), (42, 51111), (43, 51078), (44, 51051), (45, 50994), (46, 50991), (47, 50985), (49, 50934), (50, 50928), (51, 50901), (52, 50898), (53, 50859), (54, 50853),

Gene: Winget_81 Start: 51446, Stop: 50268, Start Num: 4
Candidate Starts for Winget_81:
(3, 51551), (Start: 4 @51446 has 23 MA's), (Start: 5 @51431 has 1 MA's), (Start: 6 @51389 has 1 MA's), (Start: 7 @51311 has 7 MA's), (8, 51281), (9, 51266), (10, 51248), (11, 51209), (12, 51188), (13, 51185), (14, 51167), (15, 51146), (16, 51137), (17, 51113), (18, 51071), (19, 51062), (20, 51056), (21, 51005), (22, 50999), (23, 50984), (24, 50918), (25, 50909), (26, 50879), (27, 50867), (28, 50864), (29, 50861), (30, 50840), (31, 50837), (32, 50816), (33, 50777), (34, 50750), (35, 50729), (36, 50723), (37, 50708), (38, 50663), (39, 50651), (40, 50597), (41, 50591), (42, 50543), (43, 50510), (44, 50483), (45, 50426), (46, 50423), (47, 50417), (49, 50366), (50, 50360), (51, 50333), (52, 50330), (53, 50291), (54, 50285), (55, 50279),

Gene: Wogge42_80 Start: 50803, Stop: 49760, Start Num: 7
Candidate Starts for Wogge42_80:
(3, 51043), (Start: 4 @50938 has 23 MA's), (Start: 5 @50923 has 1 MA's), (Start: 6 @50881 has 1 MA's), (Start: 7 @50803 has 7 MA's), (8, 50773), (9, 50758), (10, 50740), (11, 50701), (12, 50680), (13, 50677), (14, 50659), (15, 50638), (16, 50629), (17, 50605), (18, 50563), (19, 50554), (20, 50548), (21, 50497), (22, 50491), (23, 50476), (24, 50410), (25, 50401), (26, 50371), (27, 50359), (28, 50356), (29, 50353), (30, 50332), (31, 50329), (32, 50308), (33, 50269), (34, 50242), (35, 50221), (36, 50215), (37, 50200), (38, 50155), (39, 50143), (40, 50089), (41, 50083), (42, 50035), (43, 50002), (44, 49975), (45, 49918), (46, 49915), (47, 49909), (49, 49858), (50, 49852), (51, 49825), (52, 49822), (53, 49783), (54, 49777), (55, 49771),

Gene: YoyoKar_78 Start: 50597, Stop: 49554, Start Num: 7
Candidate Starts for YoyoKar_78:
(3, 50837), (Start: 4 @50732 has 23 MA's), (Start: 5 @50717 has 1 MA's), (Start: 6 @50675 has 1 MA's), (Start: 7 @50597 has 7 MA's), (8, 50567), (9, 50552), (10, 50534), (11, 50495), (12, 50474), (13, 50471), (14, 50453), (15, 50432), (16, 50423), (17, 50399), (18, 50357), (19, 50348), (20, 50342), (21, 50291), (22, 50285), (23, 50270), (24, 50204), (25, 50195), (26, 50165), (27, 50153), (28, 50150), (29, 50147), (30, 50126), (31, 50123), (33, 50063), (34, 50036), (35, 50015), (36, 50009), (37, 49994), (38, 49949), (39, 49937), (40, 49883), (41, 49877), (42, 49829), (43, 49796), (44, 49769), (45, 49712), (46, 49709), (47, 49703), (49, 49652), (50, 49646), (51, 49619), (52, 49616), (53, 49577), (54, 49571),

Gene: YungJamal_86 Start: 53238, Stop: 52060, Start Num: 4
Candidate Starts for YungJamal_86:
(Start: 4 @53238 has 23 MA's), (Start: 5 @53223 has 1 MA's), (Start: 6 @53181 has 1 MA's), (Start: 7 @53103 has 7 MA's), (9, 53058), (10, 53040), (11, 53001), (12, 52980), (13, 52977), (14, 52959), (15, 52938), (16, 52929), (17, 52905), (18, 52863), (19, 52854), (20, 52848), (21, 52797), (22, 52791), (23, 52776), (24, 52710), (25, 52701), (27, 52659), (28, 52656), (29, 52653), (30, 52632), (31, 52629), (33, 52569), (34, 52542), (35, 52521), (36, 52515), (37, 52500), (38, 52455), (39, 52443), (40, 52389), (41, 52383), (42, 52335), (43, 52302), (44, 52275), (45, 52218), (46, 52215), (47, 52209), (48, 52161), (49, 52158), (50, 52152), (51, 52125), (52, 52122), (53, 52083), (54, 52077),

Gene: Zakhe101_82 Start: 52293, Stop: 51250, Start Num: 7
Candidate Starts for Zakhe101_82:
(1, 52611), (2, 52575), (Start: 4 @52428 has 23 MA's), (Start: 5 @52413 has 1 MA's), (Start: 6 @52371 has 1 MA's), (Start: 7 @52293 has 7 MA's), (9, 52248), (10, 52230), (11, 52191), (12, 52170), (13, 52167), (14, 52149), (15, 52128), (16, 52119), (17, 52095), (18, 52053), (19, 52044), (20, 52038), (21, 51987), (22, 51981), (23, 51966), (24, 51900), (25, 51891), (26, 51861), (27, 51849), (28, 51846), (29, 51843), (30, 51822), (31, 51819), (33, 51759), (34, 51732), (35, 51711), (36, 51705), (37, 51690), (38, 51645), (39, 51633), (40, 51579), (41, 51573), (42, 51525), (43, 51492), (44, 51465), (45, 51408), (46, 51405), (47, 51399), (49, 51348), (50, 51342), (51, 51315), (52, 51312), (53, 51273), (54, 51267),

Gene: Zebo_80 Start: 51044, Stop: 50001, Start Num: 7
Candidate Starts for Zebo_80:
(3, 51284), (Start: 4 @51179 has 23 MA's), (Start: 5 @51164 has 1 MA's), (Start: 6 @51122 has 1 MA's), (Start: 7 @51044 has 7 MA's), (8, 51014), (9, 50999), (10, 50981), (11, 50942), (12, 50921), (13, 50918), (14, 50900), (15, 50879), (16, 50870), (17, 50846), (18, 50804), (19, 50795), (20, 50789), (21, 50738), (22, 50732), (23, 50717), (24, 50651), (25, 50642), (26, 50612), (27, 50600), (28, 50597), (29, 50594), (30, 50573), (31, 50570), (33, 50510), (34, 50483), (35, 50462), (36, 50456), (37, 50441), (38, 50396), (39, 50384), (40, 50330), (41, 50324), (42, 50276), (43, 50243), (44, 50216), (45, 50159), (46, 50156), (47, 50150), (49, 50099), (50, 50093), (51, 50066), (52, 50063), (53, 50024), (54, 50018), (55, 50012),