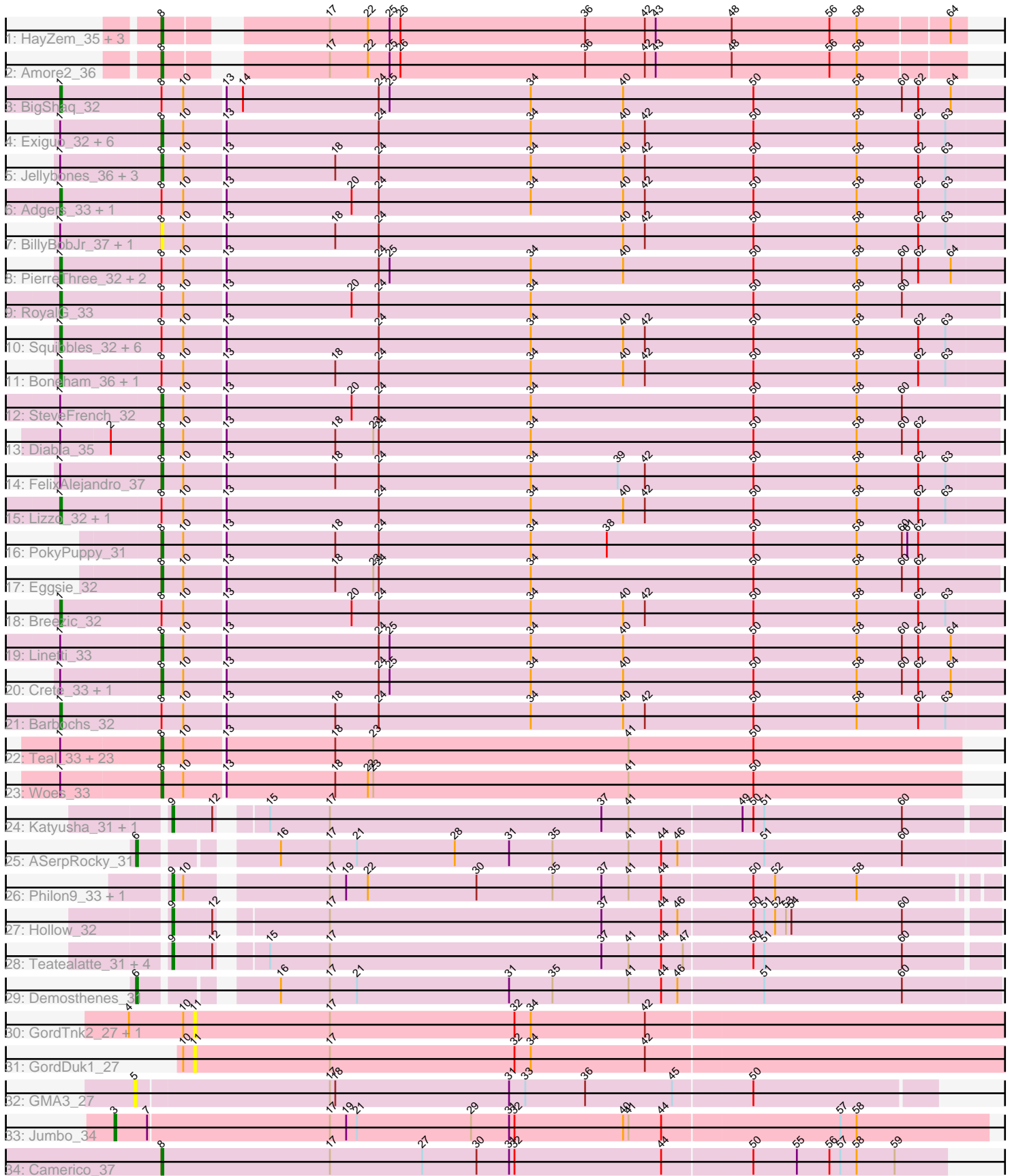


Pham 294626



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 294626 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294626 has 89 members, 11 are drafts.

Phages represented in each track:

- Track 1 : HayZem_35, GMA7_26, GTE7_26, Austin_36
- Track 2 : Amore2_36
- Track 3 : BigShaq_32
- Track 4 : Exiguo_32, RemRem_33, John316_36, Beaver_36, Worcestershire_32, Kelzog_32, Monty_31
- Track 5 : Jellybones_36, Msay19_37, Butterball_36, Poland_37
- Track 6 : Adgers_33, Sombrero_32
- Track 7 : BillyBobJr_37, CinnamonToast_37
- Track 8 : PierreThree_32, Chelms_32, Dakiti_32
- Track 9 : RoyalG_33
- Track 10 : Squibbles_32, Flakey_32, Ekhein_32, Hotorobo_32, Sam12_32, Gorko_32, GourdThymes_32
- Track 11 : Boneham_36, BirksAndSocks_36
- Track 12 : SteveFrench_32
- Track 13 : Diabla_35
- Track 14 : FelixAlejandro_37
- Track 15 : Lizzo_32, CathyBurgh_32
- Track 16 : PokyPuppy_31
- Track 17 : Eggsie_32
- Track 18 : Breezic_32
- Track 19 : Linetti_33
- Track 20 : Crete_33, BenoitCattle_32
- Track 21 : Barbochs_32
- Track 22 : Teal_33, Jams_33, Luker_34, Sticker17_33, Nimi13_33, Minos_34, Shelley_33, Harambe_33, Lahirium_33, Hail2Pitt_33, Anamika_33, Neoevie_33, Guillaume_33, GalacticEye_33, Hello_33, Berries_33, Charianelly_33, Bianmat_33, Damp_33, MrWormie_33, Jormungandr_33, Kaseim_33, Newt_34, Lidong_33
- Track 23 : Woes_33
- Track 24 : Katyusha_31, Benczkowski14_31
- Track 25 : ASerpRocky_31
- Track 26 : Philon9_33, Vitaenoi_33
- Track 27 : Hollow_32
- Track 28 : Teatealatte_31, Tredge_31, Teech_31, Kvothe_31, Niagara_31
- Track 29 : Demosthenes_31
- Track 30 : GordTnk2_27, Gmala1_27
- Track 31 : GordDuk1_27
- Track 32 : GMA3_27

- Track 33 : Jumbo_34
- Track 34 : Camerico_37

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

The start number called the most often in the published annotations is 8, it was called in 45 of the 78 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amore2_36, Anamika_33, Austin_36, Beaver_36, BenoitCattle_32, Berries_33, Bianmat_33, BillyBobJr_37, Butterball_36, Camerico_37, Charianelly_33, CinnamonToast_37, Crete_33, Damp_33, Diabla_35, Eggsie_32, Exiguo_32, FelixAlejandro_37, GMA7_26, GTE7_26, GalacticEye_33, Guillaume_33, Hail2Pitt_33, Harambe_33, HayZem_35, Hello_33, Jams_33, Jellybones_36, John316_36, Jormungandr_33, Kaseim_33, Kelzog_32, Lahirium_33, Lidong_33, Linetti_33, Luker_34, Minos_34, Monty_31, MrWormie_33, Msay19_37, Neoevie_33, Newt_34, Nimi13_33, PokyPuppy_31, Poland_37, RemRem_33, Shelley_33, SteveFrench_32, Sticker17_33, Teal_33, Woes_33, Worcestershire_32,

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

- Adgers_33, Barbochs_32, BigShaq_32, BirksAndSocks_36, Boneham_36, Breezic_32, CathyBurgh_32, Chelms_32, Dakiti_32, Ekhein_32, Flakey_32, Gorko_32, GourdThymes_32, Hotorobo_32, Lizzo_32, PierreThree_32, RoyalG_33, Sam12_32, Sombrero_32, Squibbles_32,

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

- ASerpRocky_31, Benczkowski14_31, Demosthenes_31, GMA3_27, Gmala1_27, GordDuk1_27, GordTnk2_27, Hollow_32, Jumbo_34, Katyusha_31, Kvothe_31, Niagara_31, Philon9_33, Teatealatte_31, Teech_31, Tredge_31, Vitaenoi_33,

Summary by start number:

Start 1:

- Found in 64 of 89 (71.9%) of genes in pham
- Manual Annotations of this start: 20 of 78
- Called 31.2% of time when present
- Phage (with cluster) where this start called: Adgers_33 (CS2), Barbochs_32 (CS2), BigShaq_32 (CS2), BirksAndSocks_36 (CS2), Boneham_36 (CS2), Breezic_32 (CS2), CathyBurgh_32 (CS2), Chelms_32 (CS2), Dakiti_32 (CS2), Ekhein_32 (CS2), Flakey_32 (CS2), Gorko_32 (CS2), GourdThymes_32 (CS2), Hotorobo_32 (CS2), Lizzo_32 (CS2), PierreThree_32 (CS2), RoyalG_33 (CS2), Sam12_32 (CS2), Sombrero_32 (CS2), Squibbles_32 (CS2),

Start 3:

- Found in 1 of 89 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 78
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jumbo_34 (DF3),

Start 5:

- Found in 1 of 89 (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_27 (DF2),

Start 6:

- Found in 2 of 89 (2.2%) of genes in pham
- Manual Annotations of this start: 2 of 78
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ASerpRocky_31 (CS4), Demosthenes_31 (CS4),

Start 8:

- Found in 72 of 89 (80.9%) of genes in pham
- Manual Annotations of this start: 45 of 78
- Called 72.2% of time when present
- Phage (with cluster) where this start called: Amore2_36 (CS1), Anamika_33 (CS3), Austin_36 (CS1), Beaver_36 (CS2), BenoitCattle_32 (CS2), Berries_33 (CS3), Bianmat_33 (CS3), BillyBobJr_37 (CS2), Butterball_36 (CS2), Camerico_37 (DF4), Charianelly_33 (CS3), CinnamonToast_37 (CS2), Crete_33 (CS2), Damp_33 (CS3), Diabla_35 (CS2), Eggsie_32 (CS2), Exiguo_32 (CS2), FelixAlejandro_37 (CS2), GMA7_26 (CS1), GTE7_26 (CS1), GalacticEye_33 (CS3), Guillaume_33 (CS3), Hail2Pitt_33 (CS3), Harambe_33 (CS3), HayZem_35 (CS1), Hello_33 (CS3), Jams_33 (CS3), Jellybones_36 (CS2), John316_36 (CS2), Jormungandr_33 (CS3), Kaseim_33 (CS3), Kelzog_32 (CS2), Lahirium_33 (CS3), Lidong_33 (CS3), Linetti_33 (CS2), Luker_34 (CS3), Minos_34 (CS3), Monty_31 (CS2), MrWormie_33 (CS3), Msay19_37 (CS2), Neoevie_33 (CS3), Newt_34 (CS3), Nimi13_33 (CS3), PokyPuppy_31 (CS2), Poland_37 (CS2), RemRem_33 (CS2), Shelley_33 (CS3), SteveFrench_32 (CS2), Sticker17_33 (CS3), Teal_33 (CS3), Woes_33 (CS3), Worcestershire_32 (CS2),

Start 9:

- Found in 10 of 89 (11.2%) of genes in pham
- Manual Annotations of this start: 10 of 78
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Benczkowski14_31 (CS4), Hollow_32 (CS4), Katyusha_31 (CS4), Kvothe_31 (CS4), Niagara_31 (CS4), Philon9_33 (CS4), Teatealatte_31 (CS4), Teech_31 (CS4), Tredge_31 (CS4), Vitaenoi_33 (CS4),

Start 11:

- Found in 3 of 89 (3.4%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gmala1_27 (DF1), GordDuk1_27 (DF1), GordTnk2_27 (DF1),

Summary by clusters:

There are 8 clusters represented in this pham: DF4, DF1, DF3, DF2, CS4, CS1, CS3, CS2,

Info for manual annotations of cluster CS1:

- Start number 8 was manually annotated 3 times for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 1 was manually annotated 20 times for cluster CS2.
- Start number 8 was manually annotated 16 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 8 was manually annotated 25 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 6 was manually annotated 2 times for cluster CS4.
- Start number 9 was manually annotated 10 times for cluster CS4.

Info for manual annotations of cluster DF3:

- Start number 3 was manually annotated 1 time for cluster DF3.

Info for manual annotations of cluster DF4:

- Start number 8 was manually annotated 1 time for cluster DF4.

Gene Information:

Gene: ASerpRocky_31 Start: 39045, Stop: 39497, Start Num: 6

Candidate Starts for ASerpRocky_31:

(Start: 6 @39045 has 2 MA's), (16, 39105), (17, 39132), (21, 39147), (28, 39201), (31, 39231), (35, 39255), (41, 39297), (44, 39315), (46, 39324), (51, 39369), (60, 39444),

Gene: Adgers_33 Start: 37508, Stop: 38029, Start Num: 1

Candidate Starts for Adgers_33:

(Start: 1 @37508 has 20 MA's), (Start: 8 @37562 has 45 MA's), (10, 37574), (13, 37595), (20, 37664), (24, 37679), (34, 37763), (40, 37814), (42, 37826), (50, 37886), (58, 37943), (62, 37976), (63, 37991),

Gene: Amore2_36 Start: 38215, Stop: 38634, Start Num: 8

Candidate Starts for Amore2_36:

(Start: 8 @38215 has 45 MA's), (17, 38287), (22, 38308), (25, 38320), (26, 38326), (36, 38428), (42, 38461), (43, 38467), (48, 38509), (56, 38563), (58, 38578),

Gene: Anamika_33 Start: 39971, Stop: 40408, Start Num: 8

Candidate Starts for Anamika_33:

(Start: 1 @39917 has 20 MA's), (Start: 8 @39971 has 45 MA's), (10, 39983), (13, 40004), (18, 40064), (23, 40085), (41, 40226), (50, 40295),

Gene: Austin_36 Start: 38215, Stop: 38634, Start Num: 8

Candidate Starts for Austin_36:

(Start: 8 @38215 has 45 MA's), (17, 38287), (22, 38308), (25, 38320), (26, 38326), (36, 38428), (42, 38461), (43, 38467), (48, 38509), (56, 38563), (58, 38578), (64, 38626),

Gene: Barbochs_32 Start: 37346, Stop: 37867, Start Num: 1

Candidate Starts for Barbochs_32:

(Start: 1 @37346 has 20 MA's), (Start: 8 @37400 has 45 MA's), (10, 37412), (13, 37433), (18, 37493), (24, 37517), (34, 37601), (40, 37652), (42, 37664), (50, 37724), (58, 37781), (62, 37814), (63, 37829),

Gene: Beaver_36 Start: 39448, Stop: 39915, Start Num: 8

Candidate Starts for Beaver_36:

(Start: 1 @39394 has 20 MA's), (Start: 8 @39448 has 45 MA's), (10, 39460), (13, 39481), (24, 39565), (34, 39649), (40, 39700), (42, 39712), (50, 39772), (58, 39829), (62, 39862), (63, 39877),

Gene: Benczkowski14_31 Start: 39098, Stop: 39532, Start Num: 9

Candidate Starts for Benczkowski14_31:

(Start: 9 @39098 has 10 MA's), (12, 39119), (15, 39137), (17, 39170), (37, 39320), (41, 39335), (49, 39395), (50, 39401), (51, 39407), (60, 39482),

Gene: BenoitCattle_32 Start: 37503, Stop: 37970, Start Num: 8

Candidate Starts for BenoitCattle_32:

(Start: 1 @37449 has 20 MA's), (Start: 8 @37503 has 45 MA's), (10, 37515), (13, 37536), (24, 37620), (25, 37626), (34, 37704), (40, 37755), (50, 37827), (58, 37884), (60, 37908), (62, 37917), (64, 37935),

Gene: Berries_33 Start: 39941, Stop: 40378, Start Num: 8

Candidate Starts for Berries_33:

(Start: 1 @39887 has 20 MA's), (Start: 8 @39941 has 45 MA's), (10, 39953), (13, 39974), (18, 40034), (23, 40055), (41, 40196), (50, 40265),

Gene: Bianmat_33 Start: 39981, Stop: 40418, Start Num: 8

Candidate Starts for Bianmat_33:

(Start: 1 @39927 has 20 MA's), (Start: 8 @39981 has 45 MA's), (10, 39993), (13, 40014), (18, 40074), (23, 40095), (41, 40236), (50, 40305),

Gene: BigShaq_32 Start: 37454, Stop: 37975, Start Num: 1

Candidate Starts for BigShaq_32:

(Start: 1 @37454 has 20 MA's), (Start: 8 @37508 has 45 MA's), (10, 37520), (13, 37541), (14, 37550), (24, 37625), (25, 37631), (34, 37709), (40, 37760), (50, 37832), (58, 37889), (60, 37913), (62, 37922), (64, 37940),

Gene: BillyBobJr_37 Start: 39479, Stop: 39946, Start Num: 8

Candidate Starts for BillyBobJr_37:

(Start: 1 @39425 has 20 MA's), (Start: 8 @39479 has 45 MA's), (10, 39491), (13, 39512), (18, 39572), (24, 39596), (40, 39731), (42, 39743), (50, 39803), (58, 39860), (62, 39893), (63, 39908),

Gene: BirksAndSocks_36 Start: 39372, Stop: 39893, Start Num: 1

Candidate Starts for BirksAndSocks_36:

(Start: 1 @39372 has 20 MA's), (Start: 8 @39426 has 45 MA's), (10, 39438), (13, 39459), (18, 39519), (24, 39543), (34, 39627), (40, 39678), (42, 39690), (50, 39750), (58, 39807), (62, 39840), (63, 39855),

Gene: Boneham_36 Start: 39371, Stop: 39892, Start Num: 1

Candidate Starts for Boneham_36:

(Start: 1 @39371 has 20 MA's), (Start: 8 @39425 has 45 MA's), (10, 39437), (13, 39458), (18, 39518), (24, 39542), (34, 39626), (40, 39677), (42, 39689), (50, 39749), (58, 39806), (62, 39839), (63, 39854),

Gene: Breezic_32 Start: 37360, Stop: 37881, Start Num: 1

Candidate Starts for Breezic_32:

(Start: 1 @37360 has 20 MA's), (Start: 8 @37414 has 45 MA's), (10, 37426), (13, 37447), (20, 37516), (24, 37531), (34, 37615), (40, 37666), (42, 37678), (50, 37738), (58, 37795), (62, 37828), (63, 37843),

Gene: Butterball_36 Start: 39425, Stop: 39892, Start Num: 8

Candidate Starts for Butterball_36:

(Start: 1 @39371 has 20 MA's), (Start: 8 @39425 has 45 MA's), (10, 39437), (13, 39458), (18, 39518), (24, 39542), (34, 39626), (40, 39677), (42, 39689), (50, 39749), (58, 39806), (62, 39839), (63, 39854),

Gene: Camerico_37 Start: 41920, Stop: 42348, Start Num: 8

Candidate Starts for Camerico_37:

(Start: 8 @41920 has 45 MA's), (17, 42013), (27, 42064), (30, 42094), (31, 42112), (32, 42115), (44, 42196), (50, 42244), (55, 42268), (56, 42286), (57, 42292), (58, 42301), (59, 42322),

Gene: CathyBurgh_32 Start: 38214, Stop: 38735, Start Num: 1

Candidate Starts for CathyBurgh_32:

(Start: 1 @38214 has 20 MA's), (Start: 8 @38268 has 45 MA's), (10, 38280), (13, 38301), (24, 38385), (34, 38469), (40, 38520), (42, 38532), (50, 38592), (58, 38649), (62, 38682), (63, 38697),

Gene: Charianelly_33 Start: 39691, Stop: 40128, Start Num: 8

Candidate Starts for Charianelly_33:

(Start: 1 @39637 has 20 MA's), (Start: 8 @39691 has 45 MA's), (10, 39703), (13, 39724), (18, 39784), (23, 39805), (41, 39946), (50, 40015),

Gene: Chelms_32 Start: 37457, Stop: 37978, Start Num: 1

Candidate Starts for Chelms_32:

(Start: 1 @37457 has 20 MA's), (Start: 8 @37511 has 45 MA's), (10, 37523), (13, 37544), (24, 37628), (25, 37634), (34, 37712), (40, 37763), (50, 37835), (58, 37892), (60, 37916), (62, 37925), (64, 37943),

Gene: CinnamonToast_37 Start: 39479, Stop: 39946, Start Num: 8

Candidate Starts for CinnamonToast_37:

(Start: 1 @39425 has 20 MA's), (Start: 8 @39479 has 45 MA's), (10, 39491), (13, 39512), (18, 39572), (24, 39596), (40, 39731), (42, 39743), (50, 39803), (58, 39860), (62, 39893), (63, 39908),

Gene: Crete_33 Start: 37774, Stop: 38241, Start Num: 8

Candidate Starts for Crete_33:

(Start: 1 @37720 has 20 MA's), (Start: 8 @37774 has 45 MA's), (10, 37786), (13, 37807), (24, 37891), (25, 37897), (34, 37975), (40, 38026), (50, 38098), (58, 38155), (60, 38179), (62, 38188), (64, 38206),

Gene: Dakiti_32 Start: 38325, Stop: 38846, Start Num: 1

Candidate Starts for Dakiti_32:

(Start: 1 @38325 has 20 MA's), (Start: 8 @38379 has 45 MA's), (10, 38391), (13, 38412), (24, 38496), (25, 38502), (34, 38580), (40, 38631), (50, 38703), (58, 38760), (60, 38784), (62, 38793), (64, 38811),

Gene: Damp_33 Start: 38855, Stop: 39292, Start Num: 8

Candidate Starts for Damp_33:

(Start: 1 @38801 has 20 MA's), (Start: 8 @38855 has 45 MA's), (10, 38867), (13, 38888), (18, 38948), (23, 38969), (41, 39110), (50, 39179),

Gene: Demosthenes_31 Start: 39018, Stop: 39470, Start Num: 6

Candidate Starts for Demosthenes_31:

(Start: 6 @39018 has 2 MA's), (16, 39078), (17, 39105), (21, 39120), (31, 39204), (35, 39228), (41, 39270), (44, 39288), (46, 39297), (51, 39342), (60, 39417),

Gene: Diabla_35 Start: 39281, Stop: 39739, Start Num: 8

Candidate Starts for Diabla_35:

(Start: 1 @39227 has 20 MA's), (2, 39254), (Start: 8 @39281 has 45 MA's), (10, 39293), (13, 39314), (18, 39374), (23, 39395), (24, 39398), (34, 39482), (50, 39605), (58, 39662), (60, 39686), (62, 39695),

Gene: Eggsie_32 Start: 37550, Stop: 38008, Start Num: 8

Candidate Starts for Eggsie_32:

(Start: 8 @37550 has 45 MA's), (10, 37562), (13, 37583), (18, 37643), (23, 37664), (24, 37667), (34, 37751), (50, 37874), (58, 37931), (60, 37955), (62, 37964),

Gene: Ekhein_32 Start: 37342, Stop: 37863, Start Num: 1

Candidate Starts for Ekhein_32:

(Start: 1 @37342 has 20 MA's), (Start: 8 @37396 has 45 MA's), (10, 37408), (13, 37429), (24, 37513), (34, 37597), (40, 37648), (42, 37660), (50, 37720), (58, 37777), (62, 37810), (63, 37825),

Gene: Exiguo_32 Start: 37408, Stop: 37875, Start Num: 8

Candidate Starts for Exiguo_32:

(Start: 1 @37354 has 20 MA's), (Start: 8 @37408 has 45 MA's), (10, 37420), (13, 37441), (24, 37525), (34, 37609), (40, 37660), (42, 37672), (50, 37732), (58, 37789), (62, 37822), (63, 37837),

Gene: FelixAlejandro_37 Start: 39623, Stop: 40090, Start Num: 8

Candidate Starts for FelixAlejandro_37:

(Start: 1 @39569 has 20 MA's), (Start: 8 @39623 has 45 MA's), (10, 39635), (13, 39656), (18, 39716), (24, 39740), (34, 39824), (39, 39872), (42, 39887), (50, 39947), (58, 40004), (62, 40037), (63, 40052),

Gene: Flakey_32 Start: 38218, Stop: 38739, Start Num: 1

Candidate Starts for Flakey_32:

(Start: 1 @38218 has 20 MA's), (Start: 8 @38272 has 45 MA's), (10, 38284), (13, 38305), (24, 38389), (34, 38473), (40, 38524), (42, 38536), (50, 38596), (58, 38653), (62, 38686), (63, 38701),

Gene: GMA3_27 Start: 36415, Stop: 36849, Start Num: 5

Candidate Starts for GMA3_27:

(5, 36415), (17, 36520), (18, 36523), (31, 36619), (33, 36628), (36, 36661), (45, 36709), (50, 36751),

Gene: GMA7_26 Start: 32429, Stop: 32848, Start Num: 8

Candidate Starts for GMA7_26:

(Start: 8 @32429 has 45 MA's), (17, 32501), (22, 32522), (25, 32534), (26, 32540), (36, 32642), (42, 32675), (43, 32681), (48, 32723), (56, 32777), (58, 32792), (64, 32840),

Gene: GTE7_26 Start: 32460, Stop: 32879, Start Num: 8

Candidate Starts for GTE7_26:

(Start: 8 @32460 has 45 MA's), (17, 32532), (22, 32553), (25, 32565), (26, 32571), (36, 32673), (42, 32706), (43, 32712), (48, 32754), (56, 32808), (58, 32823), (64, 32871),

Gene: GalacticEye_33 Start: 39653, Stop: 40090, Start Num: 8

Candidate Starts for GalacticEye_33:

(Start: 1 @39599 has 20 MA's), (Start: 8 @39653 has 45 MA's), (10, 39665), (13, 39686), (18, 39746), (23, 39767), (41, 39908), (50, 39977),

Gene: Gmala1_27 Start: 34646, Stop: 35092, Start Num: 11

Candidate Starts for Gmala1_27:

(4, 34610), (10, 34640), (11, 34646), (17, 34721), (32, 34823), (34, 34832), (42, 34895),

Gene: GordDuk1_27 Start: 34584, Stop: 35030, Start Num: 11

Candidate Starts for GordDuk1_27:

(10, 34578), (11, 34584), (17, 34659), (32, 34761), (34, 34770), (42, 34833),

Gene: GordTnk2_27 Start: 34553, Stop: 34999, Start Num: 11

Candidate Starts for GordTnk2_27:

(4, 34517), (10, 34547), (11, 34553), (17, 34628), (32, 34730), (34, 34739), (42, 34802),

Gene: Gorko_32 Start: 37346, Stop: 37867, Start Num: 1

Candidate Starts for Gorko_32:

(Start: 1 @37346 has 20 MA's), (Start: 8 @37400 has 45 MA's), (10, 37412), (13, 37433), (24, 37517), (34, 37601), (40, 37652), (42, 37664), (50, 37724), (58, 37781), (62, 37814), (63, 37829),

Gene: GourdThymes_32 Start: 38220, Stop: 38741, Start Num: 1

Candidate Starts for GourdThymes_32:

(Start: 1 @38220 has 20 MA's), (Start: 8 @38274 has 45 MA's), (10, 38286), (13, 38307), (24, 38391), (34, 38475), (40, 38526), (42, 38538), (50, 38598), (58, 38655), (62, 38688), (63, 38703),

Gene: Guillaume_33 Start: 39703, Stop: 40140, Start Num: 8

Candidate Starts for Guillaume_33:

(Start: 1 @39649 has 20 MA's), (Start: 8 @39703 has 45 MA's), (10, 39715), (13, 39736), (18, 39796), (23, 39817), (41, 39958), (50, 40027),

Gene: Hail2Pitt_33 Start: 40180, Stop: 40617, Start Num: 8

Candidate Starts for Hail2Pitt_33:

(Start: 1 @40126 has 20 MA's), (Start: 8 @40180 has 45 MA's), (10, 40192), (13, 40213), (18, 40273), (23, 40294), (41, 40435), (50, 40504),

Gene: Harambe_33 Start: 39970, Stop: 40407, Start Num: 8

Candidate Starts for Harambe_33:

(Start: 1 @39916 has 20 MA's), (Start: 8 @39970 has 45 MA's), (10, 39982), (13, 40003), (18, 40063), (23, 40084), (41, 40225), (50, 40294),

Gene: HayZem_35 Start: 38212, Stop: 38631, Start Num: 8

Candidate Starts for HayZem_35:

(Start: 8 @38212 has 45 MA's), (17, 38284), (22, 38305), (25, 38317), (26, 38323), (36, 38425), (42, 38458), (43, 38464), (48, 38506), (56, 38560), (58, 38575), (64, 38623),

Gene: Hello_33 Start: 39932, Stop: 40369, Start Num: 8

Candidate Starts for Hello_33:

(Start: 1 @39878 has 20 MA's), (Start: 8 @39932 has 45 MA's), (10, 39944), (13, 39965), (18, 40025), (23, 40046), (41, 40187), (50, 40256),

Gene: Hollow_32 Start: 39444, Stop: 39878, Start Num: 9

Candidate Starts for Hollow_32:

(Start: 9 @39444 has 10 MA's), (12, 39465), (17, 39516), (37, 39666), (44, 39699), (46, 39708), (50, 39747), (51, 39753), (52, 39759), (53, 39765), (54, 39768), (60, 39828),

Gene: Hotorobo_32 Start: 38225, Stop: 38746, Start Num: 1

Candidate Starts for Hotorobo_32:

(Start: 1 @38225 has 20 MA's), (Start: 8 @38279 has 45 MA's), (10, 38291), (13, 38312), (24, 38396), (34, 38480), (40, 38531), (42, 38543), (50, 38603), (58, 38660), (62, 38693), (63, 38708),

Gene: Jams_33 Start: 39141, Stop: 39578, Start Num: 8

Candidate Starts for Jams_33:

(Start: 1 @39087 has 20 MA's), (Start: 8 @39141 has 45 MA's), (10, 39153), (13, 39174), (18, 39234), (23, 39255), (41, 39396), (50, 39465),

Gene: Jellybones_36 Start: 39484, Stop: 39951, Start Num: 8

Candidate Starts for Jellybones_36:

(Start: 1 @39430 has 20 MA's), (Start: 8 @39484 has 45 MA's), (10, 39496), (13, 39517), (18, 39577), (24, 39601), (34, 39685), (40, 39736), (42, 39748), (50, 39808), (58, 39865), (62, 39898), (63, 39913),

Gene: John316_36 Start: 39437, Stop: 39904, Start Num: 8

Candidate Starts for John316_36:

(Start: 1 @39383 has 20 MA's), (Start: 8 @39437 has 45 MA's), (10, 39449), (13, 39470), (24, 39554), (34, 39638), (40, 39689), (42, 39701), (50, 39761), (58, 39818), (62, 39851), (63, 39866),

Gene: Jormungandr_33 Start: 39685, Stop: 40122, Start Num: 8

Candidate Starts for Jormungandr_33:

(Start: 1 @39631 has 20 MA's), (Start: 8 @39685 has 45 MA's), (10, 39697), (13, 39718), (18, 39778), (23, 39799), (41, 39940), (50, 40009),

Gene: Jumbo_34 Start: 40874, Stop: 41350, Start Num: 3

Candidate Starts for Jumbo_34:

(Start: 3 @40874 has 1 MA's), (7, 40892), (17, 40991), (19, 41000), (21, 41006), (29, 41069), (31, 41090), (32, 41093), (40, 41153), (41, 41156), (44, 41174), (57, 41270), (58, 41279),

Gene: Kaseim_33 Start: 39126, Stop: 39563, Start Num: 8

Candidate Starts for Kaseim_33:

(Start: 1 @39072 has 20 MA's), (Start: 8 @39126 has 45 MA's), (10, 39138), (13, 39159), (18, 39219), (23, 39240), (41, 39381), (50, 39450),

Gene: Katyusha_31 Start: 39098, Stop: 39532, Start Num: 9

Candidate Starts for Katyusha_31:

(Start: 9 @39098 has 10 MA's), (12, 39119), (15, 39137), (17, 39170), (37, 39320), (41, 39335), (49, 39395), (50, 39401), (51, 39407), (60, 39482),

Gene: Kelzog_32 Start: 38286, Stop: 38753, Start Num: 8

Candidate Starts for Kelzog_32:

(Start: 1 @38232 has 20 MA's), (Start: 8 @38286 has 45 MA's), (10, 38298), (13, 38319), (24, 38403), (34, 38487), (40, 38538), (42, 38550), (50, 38610), (58, 38667), (62, 38700), (63, 38715),

Gene: Kvothe_31 Start: 38997, Stop: 39431, Start Num: 9

Candidate Starts for Kvothe_31:

(Start: 9 @38997 has 10 MA's), (12, 39018), (15, 39036), (17, 39069), (37, 39219), (41, 39234), (44, 39252), (47, 39264), (50, 39300), (51, 39306), (60, 39381),

Gene: Lahirium_33 Start: 40207, Stop: 40644, Start Num: 8

Candidate Starts for Lahirium_33:

(Start: 1 @40153 has 20 MA's), (Start: 8 @40207 has 45 MA's), (10, 40219), (13, 40240), (18, 40300), (23, 40321), (41, 40462), (50, 40531),

Gene: Lidong_33 Start: 39941, Stop: 40378, Start Num: 8

Candidate Starts for Lidong_33:

(Start: 1 @39887 has 20 MA's), (Start: 8 @39941 has 45 MA's), (10, 39953), (13, 39974), (18, 40034), (23, 40055), (41, 40196), (50, 40265),

Gene: Linetti_33 Start: 38505, Stop: 38972, Start Num: 8

Candidate Starts for Linetti_33:

(Start: 1 @38451 has 20 MA's), (Start: 8 @38505 has 45 MA's), (10, 38517), (13, 38538), (24, 38622), (25, 38628), (34, 38706), (40, 38757), (50, 38829), (58, 38886), (60, 38910), (62, 38919), (64, 38937),

Gene: Lizzo_32 Start: 38214, Stop: 38735, Start Num: 1

Candidate Starts for Lizzo_32:

(Start: 1 @38214 has 20 MA's), (Start: 8 @38268 has 45 MA's), (10, 38280), (13, 38301), (24, 38385), (34, 38469), (40, 38520), (42, 38532), (50, 38592), (58, 38649), (62, 38682), (63, 38697),

Gene: Luker_34 Start: 40160, Stop: 40597, Start Num: 8

Candidate Starts for Luker_34:

(Start: 1 @40106 has 20 MA's), (Start: 8 @40160 has 45 MA's), (10, 40172), (13, 40193), (18, 40253), (23, 40274), (41, 40415), (50, 40484),

Gene: Minos_34 Start: 39683, Stop: 40120, Start Num: 8

Candidate Starts for Minos_34:

(Start: 1 @39629 has 20 MA's), (Start: 8 @39683 has 45 MA's), (10, 39695), (13, 39716), (18, 39776), (23, 39797), (41, 39938), (50, 40007),

Gene: Monty_31 Start: 37418, Stop: 37885, Start Num: 8

Candidate Starts for Monty_31:

(Start: 1 @37364 has 20 MA's), (Start: 8 @37418 has 45 MA's), (10, 37430), (13, 37451), (24, 37535), (34, 37619), (40, 37670), (42, 37682), (50, 37742), (58, 37799), (62, 37832), (63, 37847),

Gene: MrWormie_33 Start: 38844, Stop: 39281, Start Num: 8

Candidate Starts for MrWormie_33:

(Start: 1 @38790 has 20 MA's), (Start: 8 @38844 has 45 MA's), (10, 38856), (13, 38877), (18, 38937), (23, 38958), (41, 39099), (50, 39168),

Gene: Msay19_37 Start: 39614, Stop: 40081, Start Num: 8

Candidate Starts for Msay19_37:

(Start: 1 @39560 has 20 MA's), (Start: 8 @39614 has 45 MA's), (10, 39626), (13, 39647), (18, 39707), (24, 39731), (34, 39815), (40, 39866), (42, 39878), (50, 39938), (58, 39995), (62, 40028), (63, 40043),

Gene: Neoevie_33 Start: 39947, Stop: 40384, Start Num: 8

Candidate Starts for Neoevie_33:

(Start: 1 @39893 has 20 MA's), (Start: 8 @39947 has 45 MA's), (10, 39959), (13, 39980), (18, 40040), (23, 40061), (41, 40202), (50, 40271),

Gene: Newt_34 Start: 40174, Stop: 40611, Start Num: 8

Candidate Starts for Newt_34:

(Start: 1 @40120 has 20 MA's), (Start: 8 @40174 has 45 MA's), (10, 40186), (13, 40207), (18, 40267), (23, 40288), (41, 40429), (50, 40498),

Gene: Niagara_31 Start: 39055, Stop: 39489, Start Num: 9

Candidate Starts for Niagara_31:

(Start: 9 @39055 has 10 MA's), (12, 39076), (15, 39094), (17, 39127), (37, 39277), (41, 39292), (44, 39310), (47, 39322), (50, 39358), (51, 39364), (60, 39439),

Gene: Nimi13_33 Start: 39692, Stop: 40129, Start Num: 8

Candidate Starts for Nimi13_33:

(Start: 1 @39638 has 20 MA's), (Start: 8 @39692 has 45 MA's), (10, 39704), (13, 39725), (18, 39785), (23, 39806), (41, 39947), (50, 40016),

Gene: Philon9_33 Start: 40236, Stop: 40667, Start Num: 9

Candidate Starts for Philon9_33:

(Start: 9 @40236 has 10 MA's), (10, 40242), (17, 40311), (19, 40320), (22, 40332), (30, 40392), (35, 40434), (37, 40461), (41, 40476), (44, 40494), (50, 40542), (52, 40554), (58, 40599),

Gene: PierreThree_32 Start: 38322, Stop: 38843, Start Num: 1

Candidate Starts for PierreThree_32:

(Start: 1 @38322 has 20 MA's), (Start: 8 @38376 has 45 MA's), (10, 38388), (13, 38409), (24, 38493), (25, 38499), (34, 38577), (40, 38628), (50, 38700), (58, 38757), (60, 38781), (62, 38790), (64, 38808),

Gene: PokyPuppy_31 Start: 38322, Stop: 38789, Start Num: 8

Candidate Starts for PokyPuppy_31:

(Start: 8 @38322 has 45 MA's), (10, 38334), (13, 38355), (18, 38415), (24, 38439), (34, 38523), (38, 38565), (50, 38646), (58, 38703), (60, 38727), (61, 38730), (62, 38736),

Gene: Poland_37 Start: 39593, Stop: 40060, Start Num: 8

Candidate Starts for Poland_37:

(Start: 1 @39539 has 20 MA's), (Start: 8 @39593 has 45 MA's), (10, 39605), (13, 39626), (18, 39686), (24, 39710), (34, 39794), (40, 39845), (42, 39857), (50, 39917), (58, 39974), (62, 40007), (63, 40022),

Gene: RemRem_33 Start: 37408, Stop: 37875, Start Num: 8

Candidate Starts for RemRem_33:

(Start: 1 @37354 has 20 MA's), (Start: 8 @37408 has 45 MA's), (10, 37420), (13, 37441), (24, 37525), (34, 37609), (40, 37660), (42, 37672), (50, 37732), (58, 37789), (62, 37822), (63, 37837),

Gene: RoyalG_33 Start: 37836, Stop: 38348, Start Num: 1

Candidate Starts for RoyalG_33:

(Start: 1 @37836 has 20 MA's), (Start: 8 @37890 has 45 MA's), (10, 37902), (13, 37923), (20, 37992), (24, 38007), (34, 38091), (50, 38214), (58, 38271), (60, 38295),

Gene: Sam12_32 Start: 37354, Stop: 37875, Start Num: 1

Candidate Starts for Sam12_32:

(Start: 1 @37354 has 20 MA's), (Start: 8 @37408 has 45 MA's), (10, 37420), (13, 37441), (24, 37525), (34, 37609), (40, 37660), (42, 37672), (50, 37732), (58, 37789), (62, 37822), (63, 37837),

Gene: Shelley_33 Start: 39168, Stop: 39605, Start Num: 8

Candidate Starts for Shelley_33:

(Start: 1 @39114 has 20 MA's), (Start: 8 @39168 has 45 MA's), (10, 39180), (13, 39201), (18, 39261), (23, 39282), (41, 39423), (50, 39492),

Gene: Sombrero_32 Start: 37356, Stop: 37877, Start Num: 1

Candidate Starts for Sombrero_32:

(Start: 1 @37356 has 20 MA's), (Start: 8 @37410 has 45 MA's), (10, 37422), (13, 37443), (20, 37512), (24, 37527), (34, 37611), (40, 37662), (42, 37674), (50, 37734), (58, 37791), (62, 37824), (63, 37839),

Gene: Squibbles_32 Start: 38217, Stop: 38738, Start Num: 1

Candidate Starts for Squibbles_32:

(Start: 1 @38217 has 20 MA's), (Start: 8 @38271 has 45 MA's), (10, 38283), (13, 38304), (24, 38388), (34, 38472), (40, 38523), (42, 38535), (50, 38595), (58, 38652), (62, 38685), (63, 38700),

Gene: SteveFrench_32 Start: 38130, Stop: 38588, Start Num: 8

Candidate Starts for SteveFrench_32:

(Start: 1 @38076 has 20 MA's), (Start: 8 @38130 has 45 MA's), (10, 38142), (13, 38163), (20, 38232), (24, 38247), (34, 38331), (50, 38454), (58, 38511), (60, 38535),

Gene: Sticker17_33 Start: 39683, Stop: 40120, Start Num: 8

Candidate Starts for Sticker17_33:

(Start: 1 @39629 has 20 MA's), (Start: 8 @39683 has 45 MA's), (10, 39695), (13, 39716), (18, 39776), (23, 39797), (41, 39938), (50, 40007),

Gene: Teal_33 Start: 40151, Stop: 40588, Start Num: 8

Candidate Starts for Teal_33:

(Start: 1 @40097 has 20 MA's), (Start: 8 @40151 has 45 MA's), (10, 40163), (13, 40184), (18, 40244), (23, 40265), (41, 40406), (50, 40475),

Gene: Teatealatte_31 Start: 39000, Stop: 39434, Start Num: 9

Candidate Starts for Teatealatte_31:

(Start: 9 @39000 has 10 MA's), (12, 39021), (15, 39039), (17, 39072), (37, 39222), (41, 39237), (44, 39255), (47, 39267), (50, 39303), (51, 39309), (60, 39384),

Gene: Teech_31 Start: 38801, Stop: 39235, Start Num: 9

Candidate Starts for Teech_31:

(Start: 9 @38801 has 10 MA's), (12, 38822), (15, 38840), (17, 38873), (37, 39023), (41, 39038), (44, 39056), (47, 39068), (50, 39104), (51, 39110), (60, 39185),

Gene: Tredge_31 Start: 39000, Stop: 39434, Start Num: 9

Candidate Starts for Tredge_31:

(Start: 9 @39000 has 10 MA's), (12, 39021), (15, 39039), (17, 39072), (37, 39222), (41, 39237), (44, 39255), (47, 39267), (50, 39303), (51, 39309), (60, 39384),

Gene: Vitaenoi_33 Start: 40235, Stop: 40666, Start Num: 9

Candidate Starts for Vitaenoi_33:

(Start: 9 @40235 has 10 MA's), (10, 40241), (17, 40310), (19, 40319), (22, 40331), (30, 40391), (35, 40433), (37, 40460), (41, 40475), (44, 40493), (50, 40541), (52, 40553), (58, 40598),

Gene: Woes_33 Start: 40202, Stop: 40639, Start Num: 8

Candidate Starts for Woes_33:

(Start: 1 @40148 has 20 MA's), (Start: 8 @40202 has 45 MA's), (10, 40214), (13, 40235), (18, 40295), (22, 40313), (23, 40316), (41, 40457), (50, 40526),

Gene: Worcestershire_32 Start: 37410, Stop: 37877, Start Num: 8

Candidate Starts for Worcestershire_32:

(Start: 1 @37356 has 20 MA's), (Start: 8 @37410 has 45 MA's), (10, 37422), (13, 37443), (24, 37527), (34, 37611), (40, 37662), (42, 37674), (50, 37734), (58, 37791), (62, 37824), (63, 37839),