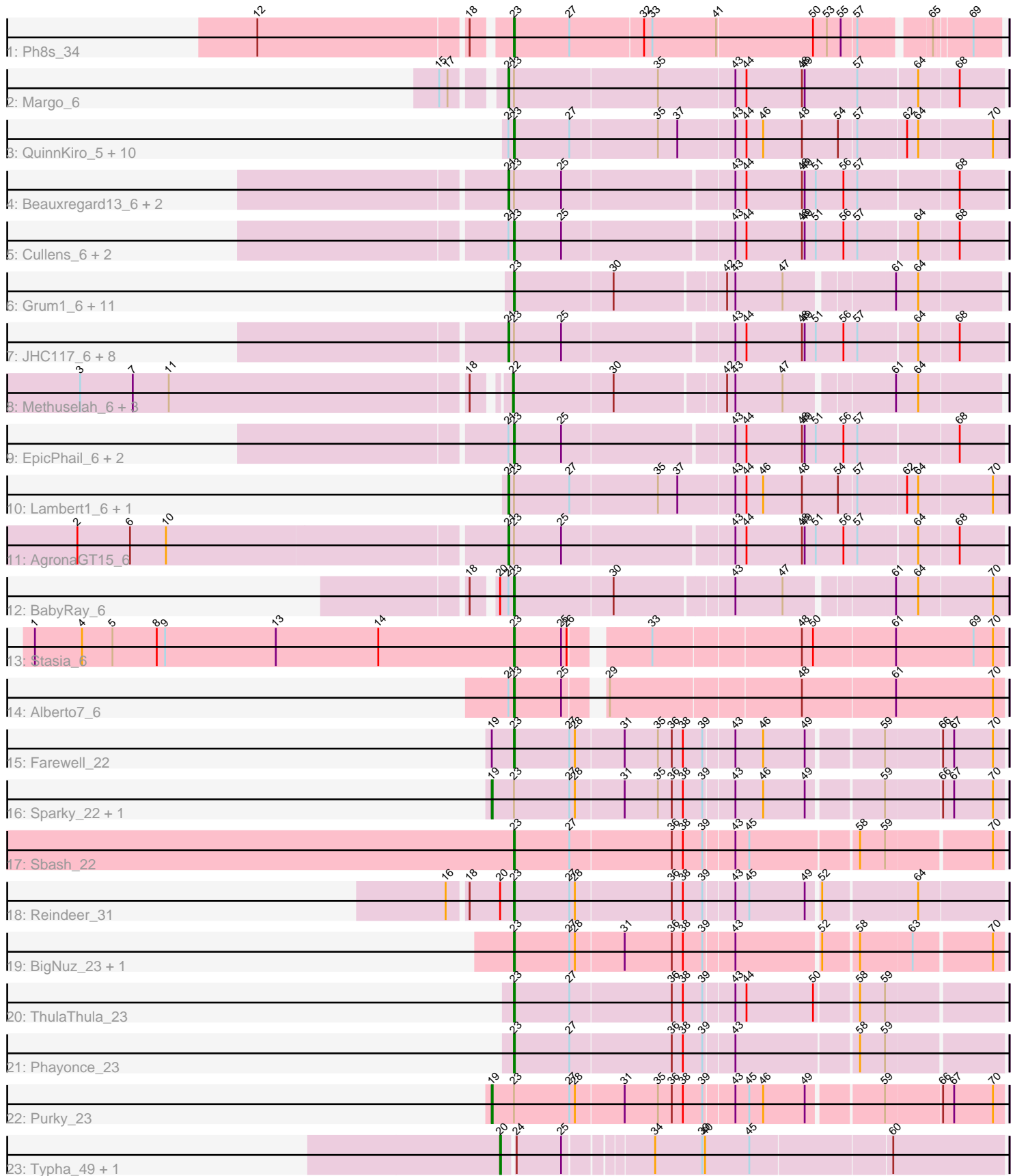


Pham 1481



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 1481 Report

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

Pham number 1481 has 65 members, 1 are drafts.

Phages represented in each track:

- Track 1 : Ph8s_34
- Track 2 : Margo_6
- Track 3 : QuinnKiro_5, Panamaxus_6, Hookmount_6, Todacoro_6, Popcicle_6, Noella_6, ResDef_5, Pocahontas_6, Veracruz_5, Caviar_6, Texage_5
- Track 4 : Beauxregard13_6, PotatoSplit_7, LBerry_6
- Track 5 : Cullens_6, Fernando_6, P28Green_6
- Track 6 : Grum1_6, Grif_6, Misomonster_8, Louie6_6, Phoxy_6, KADY_7, Spike509_6, Bxz2_6, Daishi_6, Rummer_6, HashRod_7, BuzzBuzz_5
- Track 7 : JHC117_6, LugYA_8, Phoebe_6, JenCasNa_6, Taurus_6, Marie_6, MoneyMay_6, Sabinator_6, Hercules11_6
- Track 8 : Methuselah_6, Soshari_8, LarryKay_6, Vix_6
- Track 9 : EpicPhail_6, Colbster_6, Penny1_6
- Track 10 : Lambert1_6, Norbert_5
- Track 11 : AgronaGT15_6
- Track 12 : BabyRay_6
- Track 13 : Stasia_6
- Track 14 : Alberto7_6
- Track 15 : Farewell_22
- Track 16 : Sparky_22, Che9c_22
- Track 17 : Sbash_22
- Track 18 : Reindeer_31
- Track 19 : BigNuz_23, Nazo_23
- Track 20 : ThulaThula_23
- Track 21 : Phayonce_23
- Track 22 : Purky_23
- Track 23 : Typha_49, Hilltopfarm_50

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

The start number called the most often in the published annotations is 23, it was called in 39 of the 64 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alberto7_6, BabyRay_6, BigNuz_23, BuzzBuzz_5, Bxz2_6, Caviar_6, Colbster_6, Cullens_6, Daishi_6, EpicPhail_6, Farewell_22, Fernando_6, Grif_6, Grum1_6, HashRod_7, Hookmount_6, KADY_7, Louie6_6, Misomonster_8, Nazo_23, Noella_6, P28Green_6, Panamaxus_6, Penny1_6, Ph8s_34, Phayonce_23, Phoxy_6, Pocahontas_6, Popcicle_6, QuinnKiro_5, Reindeer_31, ResDef_5, Rummer_6, Sbash_22, Spike509_6, Stasia_6, Texage_5, ThulaThula_23, Todacoro_6, Veracruz_5,

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

- AgronaGT15_6, Beauxregard13_6, Che9c_22, Hercules11_6, JHC117_6, JenCasNa_6, LBerry_6, Lambert1_6, LugYA_8, Margo_6, Marie_6, MoneyMay_6, Norbert_5, Phoebe_6, PotatoSplit_7, Purky_23, Sabinator_6, Sparky_22, Taurus_6,

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

- Hilltopfarm_50, LarryKay_6, Methuselah_6, Soshari_8, Typha_49, Vix_6,

Summary by start number:

Start 19:

- Found in 4 of 65 (6.2%) of genes in pham
- Manual Annotations of this start: 3 of 64
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Che9c_22 (I2), Purky_23 (P6), Sparky_22 (AF),

Start 20:

- Found in 4 of 65 (6.2%) of genes in pham
- Manual Annotations of this start: 2 of 64
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Hilltopfarm_50 (Y), Typha_49 (Y),

Start 21:

- Found in 35 of 65 (53.8%) of genes in pham
- Manual Annotations of this start: 16 of 64
- Called 45.7% of time when present
- Phage (with cluster) where this start called: AgronaGT15_6 (A3), Beauxregard13_6 (A3), Hercules11_6 (A3), JHC117_6 (A3), JenCasNa_6 (A3), LBerry_6 (A3), Lambert1_6 (A3), LugYA_8 (A3), Margo_6 (A3), Marie_6 (A3), MoneyMay_6 (A3), Norbert_5 (A3), Phoebe_6 (A3), PotatoSplit_7 (A3), Sabinator_6 (A3), Taurus_6 (A3),

Start 22:

- Found in 4 of 65 (6.2%) of genes in pham
- Manual Annotations of this start: 4 of 64
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LarryKay_6 (A3), Methuselah_6 (A3), Soshari_8 (A3), Vix_6 (A3),

Start 23:

- Found in 59 of 65 (90.8%) of genes in pham
- Manual Annotations of this start: 39 of 64
- Called 67.8% of time when present
- Phage (with cluster) where this start called: Alberto7_6 (A4), BabyRay_6 (A3), BigNuz_23 (P4), BuzzBuzz_5 (A3), Bxz2_6 (A3), Caviar_6 (A3), Colbster_6 (A3),

Cullens_6 (A3), Daishi_6 (A3), EpicPhail_6 (A3), Farewell_22 (AF), Fernando_6 (A3), Grif_6 (A3), Grum1_6 (A3), HashRod_7 (A3), Hookmount_6 (A3), KADY_7 (A3), Louie6_6 (A3), Misomonster_8 (A3), Nazo_23 (P4), Noella_6 (A3), P28Green_6 (A3), Panamaxus_6 (A3), Penny1_6 (A3), Ph8s_34 (A2), Phayonce_23 (P5), Phoxy_6 (A3), Pocahontas_6 (A3), Popcicle_6 (A3), QuinnKiro_5 (A3), Reindeer_31 (M1), ResDef_5 (A3), Rummer_6 (A3), Sbash_22 (I2), Spike509_6 (A3), Stasia_6 (A4), Texage_5 (A3), ThulaThula_23 (P5), Todacoro_6 (A3), Veracruz_5 (A3),

Summary by clusters:

There are 10 clusters represented in this pham: I2, P6, P4, AF, P5, A3, A2, M1, A4, Y,

Info for manual annotations of cluster A2:

- Start number 23 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A3:

- Start number 21 was manually annotated 16 times for cluster A3.
- Start number 22 was manually annotated 4 times for cluster A3.
- Start number 23 was manually annotated 29 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 23 was manually annotated 2 times for cluster A4.

Info for manual annotations of cluster AF:

- Start number 19 was manually annotated 1 time for cluster AF.
- Start number 23 was manually annotated 1 time for cluster AF.

Info for manual annotations of cluster I2:

- Start number 19 was manually annotated 1 time for cluster I2.
- Start number 23 was manually annotated 1 time for cluster I2.

Info for manual annotations of cluster M1:

- Start number 23 was manually annotated 1 time for cluster M1.

Info for manual annotations of cluster P4:

- Start number 23 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 23 was manually annotated 2 times for cluster P5.

Info for manual annotations of cluster P6:

- Start number 19 was manually annotated 1 time for cluster P6.

Info for manual annotations of cluster Y:

- Start number 20 was manually annotated 2 times for cluster Y.

Gene Information:

Gene: AgronaGT15_6 Start: 3193, Stop: 3708, Start Num: 21

Candidate Starts for AgronaGT15_6:

(2, 2740), (6, 2797), (10, 2836), (Start: 21 @3193 has 16 MA's), (Start: 23 @3199 has 39 MA's), (25, 3250), (43, 3427), (44, 3439), (48, 3499), (49, 3502), (51, 3514), (56, 3544), (57, 3559), (64, 3619), (68, 3661),

Gene: Alberto7_6 Start: 3446, Stop: 3940, Start Num: 23

Candidate Starts for Alberto7_6:

(Start: 21 @3440 has 16 MA's), (Start: 23 @3446 has 39 MA's), (25, 3497), (29, 3527), (48, 3725), (61, 3824), (70, 3929),

Gene: BabyRay_6 Start: 3455, Stop: 3955, Start Num: 23

Candidate Starts for BabyRay_6:

(18, 3419), (Start: 20 @3440 has 2 MA's), (Start: 21 @3449 has 16 MA's), (Start: 23 @3455 has 39 MA's), (30, 3560), (43, 3680), (47, 3731), (61, 3836), (64, 3860), (70, 3938),

Gene: Beauxregard13_6 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for Beauxregard13_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (68, 3753),

Gene: BigNuz_23 Start: 22589, Stop: 23089, Start Num: 23

Candidate Starts for BigNuz_23:

(Start: 23 @22589 has 39 MA's), (27, 22649), (28, 22655), (31, 22706), (36, 22757), (38, 22769), (39, 22790), (43, 22820), (52, 22907), (58, 22943), (63, 22997), (70, 23078),

Gene: BuzzBuzz_5 Start: 3362, Stop: 3853, Start Num: 23

Candidate Starts for BuzzBuzz_5:

(Start: 23 @3362 has 39 MA's), (30, 3467), (42, 3578), (43, 3587), (47, 3638), (61, 3743), (64, 3767),

Gene: Bxz2_6 Start: 3372, Stop: 3863, Start Num: 23

Candidate Starts for Bxz2_6:

(Start: 23 @3372 has 39 MA's), (30, 3477), (42, 3588), (43, 3597), (47, 3648), (61, 3753), (64, 3777),

Gene: Caviar_6 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for Caviar_6:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: Che9c_22 Start: 22077, Stop: 22604, Start Num: 19

Candidate Starts for Che9c_22:

(Start: 19 @22077 has 3 MA's), (Start: 23 @22101 has 39 MA's), (27, 22161), (28, 22167), (31, 22218), (35, 22254), (36, 22269), (38, 22281), (39, 22302), (43, 22332), (46, 22362), (49, 22407), (59, 22482), (66, 22539), (67, 22551), (70, 22593),

Gene: Colbster_6 Start: 3291, Stop: 3800, Start Num: 23

Candidate Starts for Colbster_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (68, 3753),

Gene: Cullens_6 Start: 3291, Stop: 3800, Start Num: 23

Candidate Starts for Cullens_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: Daishi_6 Start: 3046, Stop: 3537, Start Num: 23

Candidate Starts for Daishi_6:

(Start: 23 @3046 has 39 MA's), (30, 3151), (42, 3262), (43, 3271), (47, 3322), (61, 3427), (64, 3451),

Gene: EpicPhail_6 Start: 3291, Stop: 3800, Start Num: 23

Candidate Starts for EpicPhail_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (68, 3753),

Gene: Farewell_22 Start: 22978, Stop: 23481, Start Num: 23

Candidate Starts for Farewell_22:

(Start: 19 @22954 has 3 MA's), (Start: 23 @22978 has 39 MA's), (27, 23038), (28, 23044), (31, 23095), (35, 23131), (36, 23146), (38, 23158), (39, 23179), (43, 23209), (46, 23239), (49, 23284), (59, 23359), (66, 23416), (67, 23428), (70, 23470),

Gene: Fernando_6 Start: 3291, Stop: 3800, Start Num: 23

Candidate Starts for Fernando_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: Grif_6 Start: 3361, Stop: 3852, Start Num: 23

Candidate Starts for Grif_6:

(Start: 23 @3361 has 39 MA's), (30, 3466), (42, 3577), (43, 3586), (47, 3637), (61, 3742), (64, 3766),

Gene: Grum1_6 Start: 3271, Stop: 3762, Start Num: 23

Candidate Starts for Grum1_6:

(Start: 23 @3271 has 39 MA's), (30, 3376), (42, 3487), (43, 3496), (47, 3547), (61, 3652), (64, 3676),

Gene: HashRod_7 Start: 3362, Stop: 3853, Start Num: 23

Candidate Starts for HashRod_7:

(Start: 23 @3362 has 39 MA's), (30, 3467), (42, 3578), (43, 3587), (47, 3638), (61, 3743), (64, 3767),

Gene: Hercules11_6 Start: 3294, Stop: 3809, Start Num: 21

Candidate Starts for Hercules11_6:

(Start: 21 @3294 has 16 MA's), (Start: 23 @3300 has 39 MA's), (25, 3351), (43, 3528), (44, 3540), (48, 3600), (49, 3603), (51, 3615), (56, 3645), (57, 3660), (64, 3720), (68, 3762),

Gene: Hilltopfarm_50 Start: 37082, Stop: 37594, Start Num: 20

Candidate Starts for Hilltopfarm_50:

(Start: 20 @37082 has 2 MA's), (24, 37094), (25, 37142), (34, 37226), (39, 37277), (40, 37280), (45, 37328), (60, 37475),

Gene: Hookmount_6 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for Hookmount_6:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: JHC117_6 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for JHC117_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: JenCasNa_6 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for JenCasNa_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: KADY_7 Start: 3362, Stop: 3853, Start Num: 23

Candidate Starts for KADY_7:

(Start: 23 @3362 has 39 MA's), (30, 3467), (42, 3578), (43, 3587), (47, 3638), (61, 3743), (64, 3767),

Gene: LBerry_6 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for LBerry_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (68, 3753),

Gene: Lambert1_6 Start: 3430, Stop: 3954, Start Num: 21

Candidate Starts for Lambert1_6:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: LarryKay_6 Start: 3361, Stop: 3852, Start Num: 22

Candidate Starts for LarryKay_6:

(3, 2920), (7, 2977), (11, 3016), (18, 3331), (Start: 22 @3361 has 4 MA's), (30, 3466), (42, 3577), (43, 3586), (47, 3637), (61, 3742), (64, 3766),

Gene: Louie6_6 Start: 3362, Stop: 3853, Start Num: 23

Candidate Starts for Louie6_6:

(Start: 23 @3362 has 39 MA's), (30, 3467), (42, 3578), (43, 3587), (47, 3638), (61, 3743), (64, 3767),

Gene: LugYA_8 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for LugYA_8:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: Margo_6 Start: 3449, Stop: 3970, Start Num: 21

Candidate Starts for Margo_6:

(15, 3395), (17, 3404), (Start: 21 @3449 has 16 MA's), (Start: 23 @3455 has 39 MA's), (35, 3608), (43, 3689), (44, 3701), (48, 3761), (49, 3764), (57, 3821), (64, 3881), (68, 3923),

Gene: Marie_6 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for Marie_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: Methuselah_6 Start: 3361, Stop: 3852, Start Num: 22

Candidate Starts for Methuselah_6:

(3, 2920), (7, 2977), (11, 3016), (18, 3331), (Start: 22 @3361 has 4 MA's), (30, 3466), (42, 3577), (43, 3586), (47, 3637), (61, 3742), (64, 3766),

Gene: Misomonster_8 Start: 3361, Stop: 3852, Start Num: 23

Candidate Starts for Misomonster_8:

(Start: 23 @3361 has 39 MA's), (30, 3466), (42, 3577), (43, 3586), (47, 3637), (61, 3742), (64, 3766),

Gene: MoneyMay_6 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for MoneyMay_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: Nazo_23 Start: 22589, Stop: 23089, Start Num: 23

Candidate Starts for Nazo_23:

(Start: 23 @22589 has 39 MA's), (27, 22649), (28, 22655), (31, 22706), (36, 22757), (38, 22769), (39, 22790), (43, 22820), (52, 22907), (58, 22943), (63, 22997), (70, 23078),

Gene: Noella_6 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for Noella_6:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: Norbert_5 Start: 3430, Stop: 3954, Start Num: 21

Candidate Starts for Norbert_5:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: P28Green_6 Start: 3292, Stop: 3801, Start Num: 23

Candidate Starts for P28Green_6:

(Start: 21 @3286 has 16 MA's), (Start: 23 @3292 has 39 MA's), (25, 3343), (43, 3520), (44, 3532), (48, 3592), (49, 3595), (51, 3607), (56, 3637), (57, 3652), (64, 3712), (68, 3754),

Gene: Panamaxus_6 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for Panamaxus_6:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: Penny1_6 Start: 3291, Stop: 3800, Start Num: 23

Candidate Starts for Penny1_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (68, 3753),

Gene: Ph8s_34 Start: 23765, Stop: 24259, Start Num: 23

Candidate Starts for Ph8s_34:

(12, 23510), (18, 23729), (Start: 23 @23765 has 39 MA's), (27, 23825), (32, 23903), (33, 23912), (41, 23981), (50, 24083), (53, 24098), (55, 24113), (57, 24128), (65, 24194), (69, 24230),

Gene: Phayonce_23 Start: 22513, Stop: 23016, Start Num: 23

Candidate Starts for Phayonce_23:

(Start: 23 @22513 has 39 MA's), (27, 22573), (36, 22681), (38, 22693), (39, 22714), (43, 22744), (58, 22870), (59, 22897),

Gene: Phoebe_6 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for Phoebe_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: Phoxy_6 Start: 3362, Stop: 3853, Start Num: 23

Candidate Starts for Phoxy_6:

(Start: 23 @3362 has 39 MA's), (30, 3467), (42, 3578), (43, 3587), (47, 3638), (61, 3743), (64, 3767),

Gene: Pocahontas_6 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for Pocahontas_6:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: Popcicle_6 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for Popcicle_6:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: PotatoSplit_7 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for PotatoSplit_7:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (68, 3753),

Gene: Purky_23 Start: 22194, Stop: 22721, Start Num: 19

Candidate Starts for Purky_23:

(Start: 19 @22194 has 3 MA's), (Start: 23 @22218 has 39 MA's), (27, 22278), (28, 22284), (31, 22335), (35, 22371), (36, 22386), (38, 22398), (39, 22419), (43, 22449), (45, 22464), (46, 22479), (49, 22524), (59, 22599), (66, 22656), (67, 22668), (70, 22710),

Gene: QuinnKiro_5 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for QuinnKiro_5:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: Reindeer_31 Start: 28046, Stop: 28549, Start Num: 23

Candidate Starts for Reindeer_31:

(16, 27980), (18, 27998), (Start: 20 @28031 has 2 MA's), (Start: 23 @28046 has 39 MA's), (27, 28106), (28, 28112), (36, 28214), (38, 28226), (39, 28247), (43, 28277), (45, 28292), (49, 28352), (52, 28364), (64, 28460),

Gene: ResDef_5 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for ResDef_5:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: Rummer_6 Start: 3362, Stop: 3853, Start Num: 23

Candidate Starts for Rummer_6:

(Start: 23 @3362 has 39 MA's), (30, 3467), (42, 3578), (43, 3587), (47, 3638), (61, 3743), (64, 3767),

Gene: Sabinator_6 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for Sabinator_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: Sbash_22 Start: 22132, Stop: 22635, Start Num: 23

Candidate Starts for Sbash_22:

(Start: 23 @22132 has 39 MA's), (27, 22192), (36, 22300), (38, 22312), (39, 22333), (43, 22363), (45, 22378), (58, 22489), (59, 22516), (70, 22624),

Gene: Soshari_8 Start: 3361, Stop: 3852, Start Num: 22

Candidate Starts for Soshari_8:

(3, 2920), (7, 2977), (11, 3016), (18, 3331), (Start: 22 @3361 has 4 MA's), (30, 3466), (42, 3577), (43, 3586), (47, 3637), (61, 3742), (64, 3766),

Gene: Sparky_22 Start: 22955, Stop: 23482, Start Num: 19

Candidate Starts for Sparky_22:

(Start: 19 @22955 has 3 MA's), (Start: 23 @22979 has 39 MA's), (27, 23039), (28, 23045), (31, 23096), (35, 23132), (36, 23147), (38, 23159), (39, 23180), (43, 23210), (46, 23240), (49, 23285), (59, 23360), (66, 23417), (67, 23429), (70, 23471),

Gene: Spike509_6 Start: 3362, Stop: 3853, Start Num: 23

Candidate Starts for Spike509_6:

(Start: 23 @3362 has 39 MA's), (30, 3467), (42, 3578), (43, 3587), (47, 3638), (61, 3743), (64, 3767),

Gene: Stasia_6 Start: 3460, Stop: 3954, Start Num: 23

Candidate Starts for Stasia_6:

(1, 2941), (4, 2992), (5, 3025), (8, 3073), (9, 3082), (13, 3202), (14, 3313), (Start: 23 @3460 has 39 MA's), (25, 3511), (26, 3517), (33, 3586), (48, 3739), (50, 3751), (61, 3838), (69, 3922), (70, 3943),

Gene: Taurus_6 Start: 3285, Stop: 3800, Start Num: 21

Candidate Starts for Taurus_6:

(Start: 21 @3285 has 16 MA's), (Start: 23 @3291 has 39 MA's), (25, 3342), (43, 3519), (44, 3531), (48, 3591), (49, 3594), (51, 3606), (56, 3636), (57, 3651), (64, 3711), (68, 3753),

Gene: Texage_5 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for Texage_5:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: ThulaThula_23 Start: 22519, Stop: 23022, Start Num: 23

Candidate Starts for ThulaThula_23:

(Start: 23 @22519 has 39 MA's), (27, 22579), (36, 22687), (38, 22699), (39, 22720), (43, 22750), (44, 22762), (50, 22834), (58, 22876), (59, 22903),

Gene: Todacoro_6 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for Todacoro_6:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: Typha_49 Start: 36953, Stop: 37465, Start Num: 20

Candidate Starts for Typha_49:

(Start: 20 @36953 has 2 MA's), (24, 36965), (25, 37013), (34, 37097), (39, 37148), (40, 37151), (45, 37199), (60, 37346),

Gene: Veracruz_5 Start: 3436, Stop: 3954, Start Num: 23

Candidate Starts for Veracruz_5:

(Start: 21 @3430 has 16 MA's), (Start: 23 @3436 has 39 MA's), (27, 3496), (35, 3589), (37, 3610), (43, 3670), (44, 3682), (46, 3700), (48, 3742), (54, 3781), (57, 3799), (62, 3847), (64, 3859), (70, 3937),

Gene: Vix_6 Start: 3360, Stop: 3851, Start Num: 22

Candidate Starts for Vix_6:

(3, 2919), (7, 2976), (11, 3015), (18, 3330), (Start: 22 @3360 has 4 MA's), (30, 3465), (42, 3576), (43, 3585), (47, 3636), (61, 3741), (64, 3765),