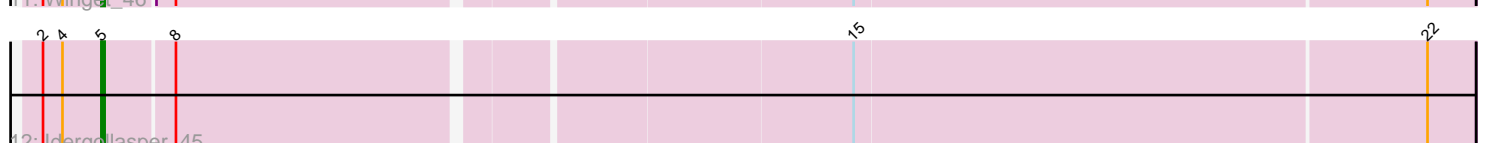
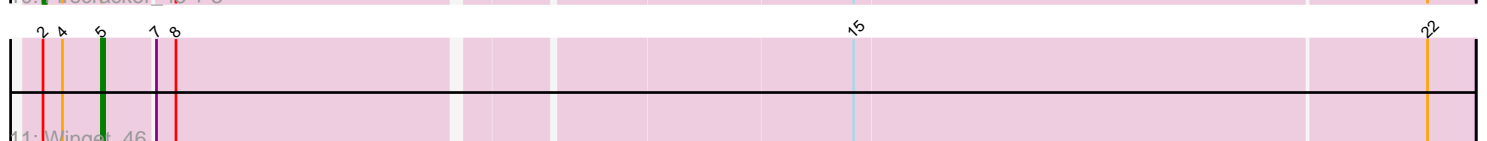
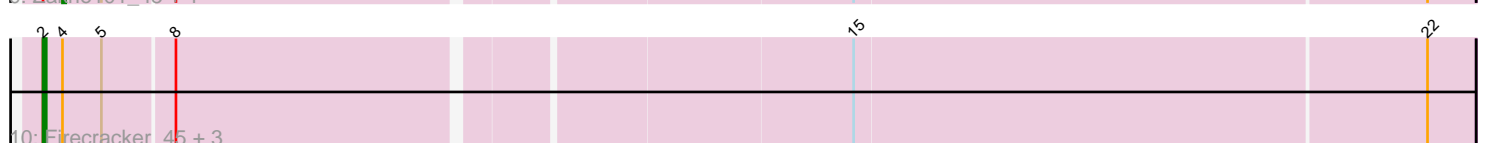
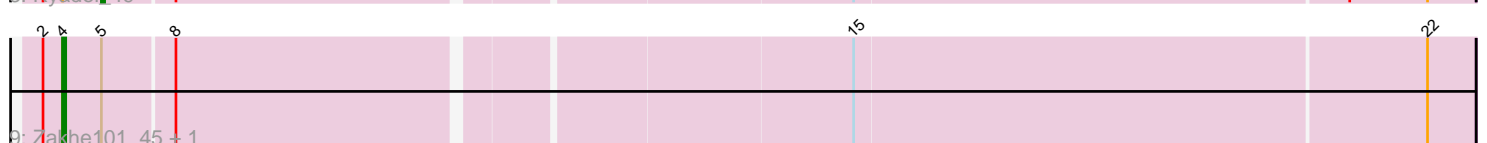
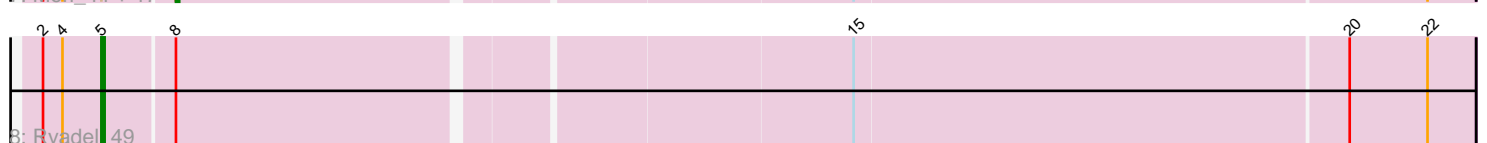
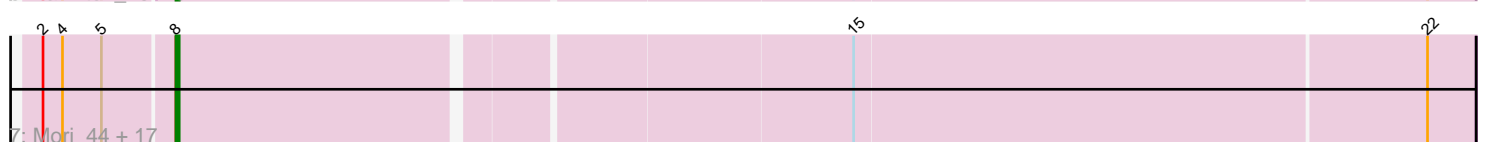
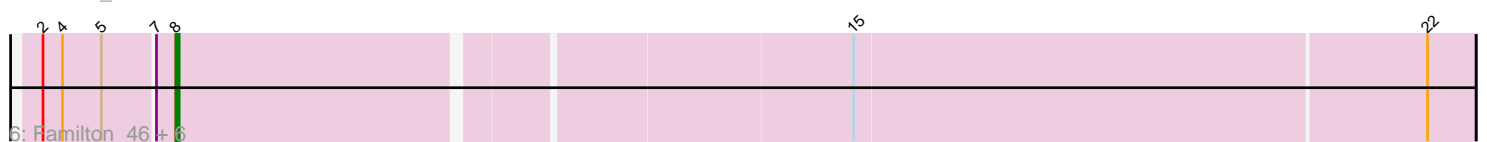
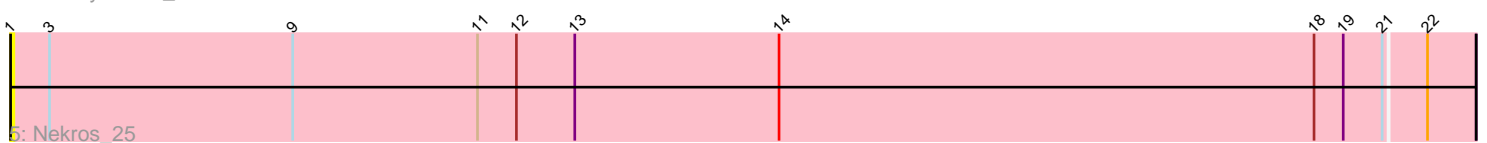
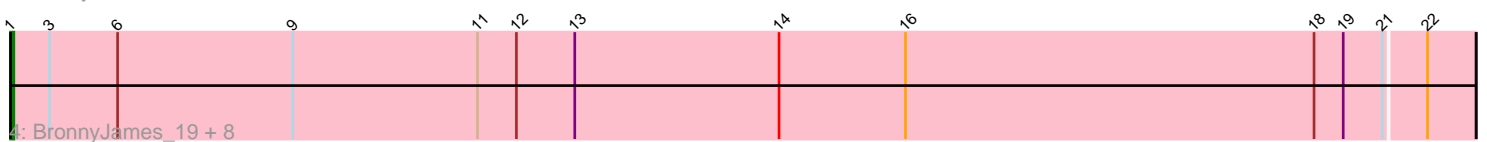
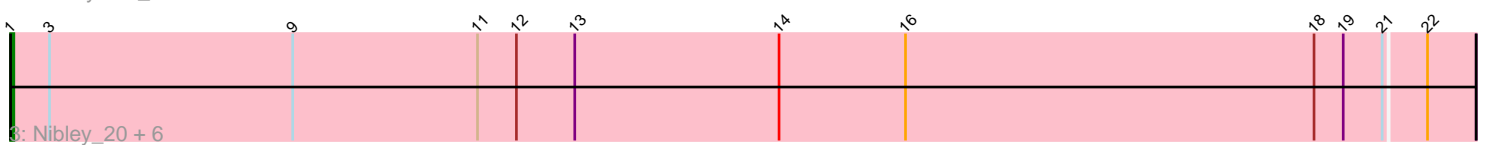
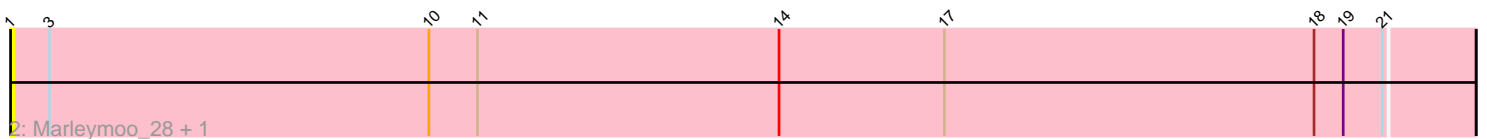
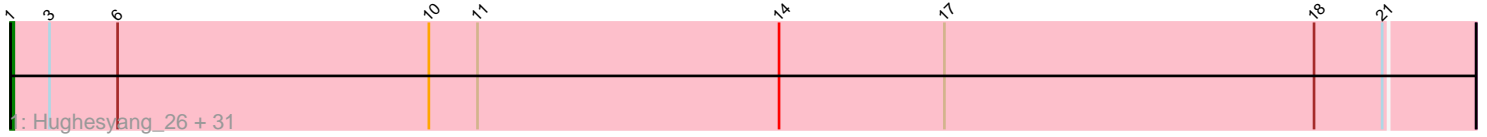


Pham 311486



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 311486 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311486 has 85 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Hughesyang_26, Halley_27, BAKA_24, Constella_22, JuicyJay_29, Minerva_27, Klein_27, Dallas_27, Bobby_28, Redno2_26, DmpstrDiver_26, Odette_26, Dove_25, Zelink_28, EricMillard_27, Duke13_24, Bagrid_25, NihilNomen_26, Phoebus_27, HokkenD_22, Yeet_25, Optimus_25, Pound_27, Kalah2_28, Xiaokay_24, Wanda_28, Beem_27, Schatzie_25, Ejimix_28, ThreeRngTarjay_26, Bombitas_24, Thibault_23
- Track 2 : Marleymoo_28, Hidrated_27
- Track 3 : Nibley_20, Courthouse_25, Omega_27, Hannaconda_22, Squint_24, Gonephishing_23, Lucky2013_25
- Track 4 : BronnyJames_19, LittleE_25, Porcelain_25, Rearden_22, Ariel_25, KashFlow_19, Shaboozey_19, MiaZeal_25, Superphikiman_25
- Track 5 : Nekros_25
- Track 6 : Familton_46, Blessica_46, JangDynasty_45, Imara_43, Zebo_45, TelAviv_42, SchoolBus_45
- Track 7 : Mori_44, Smooch_47, Vorrps_44, Alkhayr_45, KingPhillip3_45, Murai_45, NiebruSaylor_44, FoulBall_45, Krili_44, Ashwin_46, Vagabond_45, YungJamal_48, Wildflower_45, Wogge42_44, Shida_45, Schuy_46, MadKillah_46, Dylan_44
- Track 8 : Ryadel_49
- Track 9 : Zakhe101_45, YoyoKar_43
- Track 10 : Firecracker_45, Corndog_47, Catdawg_45, Bora_42
- Track 11 : Winget_46
- Track 12 : Idergollasper_45

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

The start number called the most often in the published annotations is 1, it was called in 40 of the 71 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ariel_25, BAKA_24, Bagrid_25, Beem_27, Bobby_28, Bombitas_24, BronnyJames_19, Constella_22, Courthouse_25, Dallas_27, DmpstrDiver_26, Dove_25, Duke13_24, Ejimix_28, EricMillard_27, Gonephishing_23, Halley_27, Hannaconda_22, Hidrated_27, HokkenD_22, Hughesyang_26, JuicyJay_29, Kalah2_28, KashFlow_19, Klein_27, LittleE_25, Lucky2013_25, Marleymoo_28,

MiaZeal_25, Minerva_27, Nekros_25, Nibley_20, NihilNomen_26, Odette_26, Omega_27, Optimus_25, Phoebus_27, Porcelain_25, Pound_27, Rearden_22, Redno2_26, Schatzie_25, Shaboozey_19, Squint_24, Superphikiman_25, Thibault_23, ThreeRngTarjay_26, Wanda_28, Xiaokay_24, Yeet_25, Zelink_28,

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

-

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

- Alkhayr_45, Ashwin_46, Blessica_46, Bora_42, Catdawg_45, Corndog_47, Dylan_44, Familton_46, Firecracker_45, FoulBall_45, Idergollasper_45, Imara_43, JangDynasty_45, KingPhillip3_45, Krili_44, MadKillah_46, Mori_44, Murai_45, NiebruSaylor_44, Ryadel_49, SchoolBus_45, Schuy_46, Shida_45, Smooch_47, TelAviv_42, Vagabond_45, Vorrrps_44, Wildflower_45, Winget_46, Wogge42_44, YoyoKar_43, YungJamal_48, Zakhe101_45, Zebo_45,

Summary by start number:

Start 1:

- Found in 51 of 85 (60.0%) of genes in pham
- Manual Annotations of this start: 40 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ariel_25 (J), BAKA_24 (J), Bagrid_25 (J), Beem_27 (J), Bobby_28 (J), Bombitas_24 (J), BronnyJames_19 (J), Constella_22 (J), Courthouse_25 (J), Dallas_27 (J), DmpstrDiver_26 (J), Dove_25 (J), Duke13_24 (J), Ejimix_28 (J), EricMillard_27 (J), Gonephishing_23 (J), Halley_27 (J), Hannaconda_22 (J), Hidrated_27 (J), HokkenD_22 (J), Hughesyang_26 (J), JuicyJay_29 (J), Kalah2_28 (J), KashFlow_19 (J), Klein_27 (J), LittleE_25 (J), Lucky2013_25 (J), Marleymoo_28 (J), MiaZeal_25 (J), Minerva_27 (J), Nekros_25 (J), Nibley_20 (J), NihilNomen_26 (J), Odette_26 (J), Omega_27 (J), Optimus_25 (J), Phoebus_27 (J), Porcelain_25 (J), Pound_27 (J), Rearden_22 (J), Redno2_26 (J), Schatzie_25 (J), Shaboozey_19 (J), Squint_24 (J), Superphikiman_25 (J), Thibault_23 (J), ThreeRngTarjay_26 (J), Wanda_28 (J), Xiaokay_24 (J), Yeet_25 (J), Zelink_28 (J),

Start 2:

- Found in 34 of 85 (40.0%) of genes in pham
- Manual Annotations of this start: 4 of 71
- Called 11.8% of time when present
- Phage (with cluster) where this start called: Bora_42 (O), Catdawg_45 (O), Corndog_47 (O), Firecracker_45 (O),

Start 4:

- Found in 34 of 85 (40.0%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 5.9% of time when present
- Phage (with cluster) where this start called: YoyoKar_43 (O), Zakhe101_45 (O),

Start 5:

- Found in 34 of 85 (40.0%) of genes in pham
- Manual Annotations of this start: 3 of 71
- Called 8.8% of time when present

- Phage (with cluster) where this start called: Idergollasper_45 (O), Ryadel_49 (O), Winget_46 (O),

Start 8:

- Found in 34 of 85 (40.0%) of genes in pham
- Manual Annotations of this start: 23 of 71
- Called 73.5% of time when present
- Phage (with cluster) where this start called: Alkhayr_45 (O), Ashwin_46 (O), Blessica_46 (O), Dylan_44 (O), Familton_46 (O), FoulBall_45 (O), Imara_43 (O), JangDynasty_45 (O), KingPhillip3_45 (O), Krili_44 (O), MadKillah_46 (O), Mori_44 (O), Murai_45 (O), NiebruSaylor_44 (O), SchoolBus_45 (O), Schuy_46 (O), Shida_45 (O), Smooch_47 (O), TelAviv_42 (O), Vagabond_45 (O), Vorrps_44 (O), Wildflower_45 (O), Wogge42_44 (O), YungJamal_48 (O), Zebo_45 (O),

Summary by clusters:

There are 2 clusters represented in this pham: J, O,

Info for manual annotations of cluster J:

- Start number 1 was manually annotated 40 times for cluster J.

Info for manual annotations of cluster O:

- Start number 2 was manually annotated 4 times for cluster O.
- Start number 4 was manually annotated 1 time for cluster O.
- Start number 5 was manually annotated 3 times for cluster O.
- Start number 8 was manually annotated 23 times for cluster O.

Gene Information:

Gene: Alkhayr_45 Start: 22908, Stop: 23294, Start Num: 8

Candidate Starts for Alkhayr_45:

(Start: 2 @22869 has 4 MA's), (Start: 4 @22875 has 1 MA's), (Start: 5 @22887 has 3 MA's), (Start: 8 @22908 has 23 MA's), (15, 23106), (22, 23280),

Gene: Ariel_25 Start: 14438, Stop: 14887, Start Num: 1

Candidate Starts for Ariel_25:

(Start: 1 @14438 has 40 MA's), (3, 14450), (6, 14471), (9, 14525), (11, 14582), (12, 14594), (13, 14612), (14, 14675), (16, 14714), (18, 14840), (19, 14849), (21, 14861), (22, 14873),

Gene: Ashwin_46 Start: 22906, Stop: 23292, Start Num: 8

Candidate Starts for Ashwin_46:

(Start: 2 @22867 has 4 MA's), (Start: 4 @22873 has 1 MA's), (Start: 5 @22885 has 3 MA's), (Start: 8 @22906 has 23 MA's), (15, 23104), (22, 23278),

Gene: BAKA_24 Start: 16545, Stop: 16994, Start Num: 1

Candidate Starts for BAKA_24:

(Start: 1 @16545 has 40 MA's), (3, 16557), (6, 16578), (10, 16674), (11, 16689), (14, 16782), (17, 16833), (18, 16947), (21, 16968),

Gene: Bagrid_25 Start: 16334, Stop: 16783, Start Num: 1

Candidate Starts for Bagrid_25:

(Start: 1 @16334 has 40 MA's), (3, 16346), (6, 16367), (10, 16463), (11, 16478), (14, 16571), (17, 16622), (18, 16736), (21, 16757),

Gene: Beem_27 Start: 16900, Stop: 17349, Start Num: 1

Candidate Starts for Beem_27:

(Start: 1 @16900 has 40 MA's), (3, 16912), (6, 16933), (10, 17029), (11, 17044), (14, 17137), (17, 17188), (18, 17302), (21, 17323),

Gene: Blessica_46 Start: 23309, Stop: 23695, Start Num: 8

Candidate Starts for Blessica_46:

(Start: 2 @23270 has 4 MA's), (Start: 4 @23276 has 1 MA's), (Start: 5 @23288 has 3 MA's), (7, 23303), (Start: 8 @23309 has 23 MA's), (15, 23507), (22, 23681),

Gene: Bobby_28 Start: 16853, Stop: 17302, Start Num: 1

Candidate Starts for Bobby_28:

(Start: 1 @16853 has 40 MA's), (3, 16865), (6, 16886), (10, 16982), (11, 16997), (14, 17090), (17, 17141), (18, 17255), (21, 17276),

Gene: Bombitas_24 Start: 16210, Stop: 16659, Start Num: 1

Candidate Starts for Bombitas_24:

(Start: 1 @16210 has 40 MA's), (3, 16222), (6, 16243), (10, 16339), (11, 16354), (14, 16447), (17, 16498), (18, 16612), (21, 16633),

Gene: Bora_42 Start: 22320, Stop: 22745, Start Num: 2

Candidate Starts for Bora_42:

(Start: 2 @22320 has 4 MA's), (Start: 4 @22326 has 1 MA's), (Start: 5 @22338 has 3 MA's), (Start: 8 @22359 has 23 MA's), (15, 22557), (22, 22731),

Gene: BronnyJames_19 Start: 13070, Stop: 13519, Start Num: 1

Candidate Starts for BronnyJames_19:

(Start: 1 @13070 has 40 MA's), (3, 13082), (6, 13103), (9, 13157), (11, 13214), (12, 13226), (13, 13244), (14, 13307), (16, 13346), (18, 13472), (19, 13481), (21, 13493), (22, 13505),

Gene: Catdawg_45 Start: 22959, Stop: 23384, Start Num: 2

Candidate Starts for Catdawg_45:

(Start: 2 @22959 has 4 MA's), (Start: 4 @22965 has 1 MA's), (Start: 5 @22977 has 3 MA's), (Start: 8 @22998 has 23 MA's), (15, 23196), (22, 23370),

Gene: Constella_22 Start: 15723, Stop: 16172, Start Num: 1

Candidate Starts for Constella_22:

(Start: 1 @15723 has 40 MA's), (3, 15735), (6, 15756), (10, 15852), (11, 15867), (14, 15960), (17, 16011), (18, 16125), (21, 16146),

Gene: Corndog_47 Start: 23417, Stop: 23842, Start Num: 2

Candidate Starts for Corndog_47:

(Start: 2 @23417 has 4 MA's), (Start: 4 @23423 has 1 MA's), (Start: 5 @23435 has 3 MA's), (Start: 8 @23456 has 23 MA's), (15, 23654), (22, 23828),

Gene: Courthouse_25 Start: 14840, Stop: 15289, Start Num: 1

Candidate Starts for Courthouse_25:

(Start: 1 @14840 has 40 MA's), (3, 14852), (9, 14927), (11, 14984), (12, 14996), (13, 15014), (14, 15077), (16, 15116), (18, 15242), (19, 15251), (21, 15263), (22, 15275),

Gene: Dallas_27 Start: 16440, Stop: 16889, Start Num: 1

Candidate Starts for Dallas_27:

(Start: 1 @16440 has 40 MA's), (3, 16452), (6, 16473), (10, 16569), (11, 16584), (14, 16677), (17, 16728), (18, 16842), (21, 16863),

Gene: DmpstrDiver_26 Start: 17076, Stop: 17525, Start Num: 1

Candidate Starts for DmpstrDiver_26:

(Start: 1 @17076 has 40 MA's), (3, 17088), (6, 17109), (10, 17205), (11, 17220), (14, 17313), (17, 17364), (18, 17478), (21, 17499),

Gene: Dove_25 Start: 16209, Stop: 16658, Start Num: 1

Candidate Starts for Dove_25:

(Start: 1 @16209 has 40 MA's), (3, 16221), (6, 16242), (10, 16338), (11, 16353), (14, 16446), (17, 16497), (18, 16611), (21, 16632),

Gene: Duke13_24 Start: 16474, Stop: 16923, Start Num: 1

Candidate Starts for Duke13_24:

(Start: 1 @16474 has 40 MA's), (3, 16486), (6, 16507), (10, 16603), (11, 16618), (14, 16711), (17, 16762), (18, 16876), (21, 16897),

Gene: Dylan_44 Start: 22711, Stop: 23097, Start Num: 8

Candidate Starts for Dylan_44:

(Start: 2 @22672 has 4 MA's), (Start: 4 @22678 has 1 MA's), (Start: 5 @22690 has 3 MA's), (Start: 8 @22711 has 23 MA's), (15, 22909), (22, 23083),

Gene: Ejimix_28 Start: 17650, Stop: 18099, Start Num: 1

Candidate Starts for Ejimix_28:

(Start: 1 @17650 has 40 MA's), (3, 17662), (6, 17683), (10, 17779), (11, 17794), (14, 17887), (17, 17938), (18, 18052), (21, 18073),

Gene: EricMillard_27 Start: 17186, Stop: 17635, Start Num: 1

Candidate Starts for EricMillard_27:

(Start: 1 @17186 has 40 MA's), (3, 17198), (6, 17219), (10, 17315), (11, 17330), (14, 17423), (17, 17474), (18, 17588), (21, 17609),

Gene: Familton_46 Start: 23002, Stop: 23388, Start Num: 8

Candidate Starts for Familton_46:

(Start: 2 @22963 has 4 MA's), (Start: 4 @22969 has 1 MA's), (Start: 5 @22981 has 3 MA's), (7, 22996), (Start: 8 @23002 has 23 MA's), (15, 23200), (22, 23374),

Gene: Firecracker_45 Start: 22570, Stop: 22995, Start Num: 2

Candidate Starts for Firecracker_45:

(Start: 2 @22570 has 4 MA's), (Start: 4 @22576 has 1 MA's), (Start: 5 @22588 has 3 MA's), (Start: 8 @22609 has 23 MA's), (15, 22807), (22, 22981),

Gene: FoulBall_45 Start: 22996, Stop: 23382, Start Num: 8

Candidate Starts for FoulBall_45:

(Start: 2 @22957 has 4 MA's), (Start: 4 @22963 has 1 MA's), (Start: 5 @22975 has 3 MA's), (Start: 8 @22996 has 23 MA's), (15, 23194), (22, 23368),

Gene: Gonephishing_23 Start: 15013, Stop: 15462, Start Num: 1

Candidate Starts for Gonephishing_23:

(Start: 1 @15013 has 40 MA's), (3, 15025), (9, 15100), (11, 15157), (12, 15169), (13, 15187), (14, 15250), (16, 15289), (18, 15415), (19, 15424), (21, 15436), (22, 15448),

Gene: Halley_27 Start: 16899, Stop: 17348, Start Num: 1

Candidate Starts for Halley_27:

(Start: 1 @16899 has 40 MA's), (3, 16911), (6, 16932), (10, 17028), (11, 17043), (14, 17136), (17, 17187), (18, 17301), (21, 17322),

Gene: Hannaconda_22 Start: 13520, Stop: 13969, Start Num: 1

Candidate Starts for Hannaconda_22:

(Start: 1 @13520 has 40 MA's), (3, 13532), (9, 13607), (11, 13664), (12, 13676), (13, 13694), (14, 13757), (16, 13796), (18, 13922), (19, 13931), (21, 13943), (22, 13955),

Gene: Hidrated_27 Start: 17015, Stop: 17464, Start Num: 1

Candidate Starts for Hidrated_27:

(Start: 1 @17015 has 40 MA's), (3, 17027), (10, 17144), (11, 17159), (14, 17252), (17, 17303), (18, 17417), (19, 17426), (21, 17438),

Gene: HokkenD_22 Start: 16469, Stop: 16918, Start Num: 1

Candidate Starts for HokkenD_22:

(Start: 1 @16469 has 40 MA's), (3, 16481), (6, 16502), (10, 16598), (11, 16613), (14, 16706), (17, 16757), (18, 16871), (21, 16892),

Gene: Hughesyang_26 Start: 17082, Stop: 17531, Start Num: 1

Candidate Starts for Hughesyang_26:

(Start: 1 @17082 has 40 MA's), (3, 17094), (6, 17115), (10, 17211), (11, 17226), (14, 17319), (17, 17370), (18, 17484), (21, 17505),

Gene: Idergollasper_45 Start: 22975, Stop: 23382, Start Num: 5

Candidate Starts for Idergollasper_45:

(Start: 2 @22957 has 4 MA's), (Start: 4 @22963 has 1 MA's), (Start: 5 @22975 has 3 MA's), (Start: 8 @22996 has 23 MA's), (15, 23194), (22, 23368),

Gene: Imara_43 Start: 22805, Stop: 23191, Start Num: 8

Candidate Starts for Imara_43:

(Start: 2 @22766 has 4 MA's), (Start: 4 @22772 has 1 MA's), (Start: 5 @22784 has 3 MA's), (7, 22799), (Start: 8 @22805 has 23 MA's), (15, 23003), (22, 23177),

Gene: JangDynasty_45 Start: 23091, Stop: 23477, Start Num: 8

Candidate Starts for JangDynasty_45:

(Start: 2 @23052 has 4 MA's), (Start: 4 @23058 has 1 MA's), (Start: 5 @23070 has 3 MA's), (7, 23085), (Start: 8 @23091 has 23 MA's), (15, 23289), (22, 23463),

Gene: JuicyJay_29 Start: 17733, Stop: 18182, Start Num: 1

Candidate Starts for JuicyJay_29:

(Start: 1 @17733 has 40 MA's), (3, 17745), (6, 17766), (10, 17862), (11, 17877), (14, 17970), (17, 18021), (18, 18135), (21, 18156),

Gene: Kalah2_28 Start: 17501, Stop: 17950, Start Num: 1

Candidate Starts for Kalah2_28:

(Start: 1 @17501 has 40 MA's), (3, 17513), (6, 17534), (10, 17630), (11, 17645), (14, 17738), (17, 17789), (18, 17903), (21, 17924),

Gene: KashFlow_19 Start: 13086, Stop: 13535, Start Num: 1

Candidate Starts for KashFlow_19:

(Start: 1 @13086 has 40 MA's), (3, 13098), (6, 13119), (9, 13173), (11, 13230), (12, 13242), (13, 13260), (14, 13323), (16, 13362), (18, 13488), (19, 13497), (21, 13509), (22, 13521),

Gene: KingPhillip3_45 Start: 22996, Stop: 23382, Start Num: 8

Candidate Starts for KingPhillip3_45:

(Start: 2 @22957 has 4 MA's), (Start: 4 @22963 has 1 MA's), (Start: 5 @22975 has 3 MA's), (Start: 8 @22996 has 23 MA's), (15, 23194), (22, 23368),

Gene: Klein_27 Start: 16479, Stop: 16928, Start Num: 1

Candidate Starts for Klein_27:

(Start: 1 @16479 has 40 MA's), (3, 16491), (6, 16512), (10, 16608), (11, 16623), (14, 16716), (17, 16767), (18, 16881), (21, 16902),

Gene: Krili_44 Start: 22713, Stop: 23099, Start Num: 8

Candidate Starts for Krili_44:

(Start: 2 @22674 has 4 MA's), (Start: 4 @22680 has 1 MA's), (Start: 5 @22692 has 3 MA's), (Start: 8 @22713 has 23 MA's), (15, 22911), (22, 23085),

Gene: LittleE_25 Start: 16225, Stop: 16674, Start Num: 1

Candidate Starts for LittleE_25:

(Start: 1 @16225 has 40 MA's), (3, 16237), (6, 16258), (9, 16312), (11, 16369), (12, 16381), (13, 16399), (14, 16462), (16, 16501), (18, 16627), (19, 16636), (21, 16648), (22, 16660),

Gene: Lucky2013_25 Start: 14968, Stop: 15417, Start Num: 1

Candidate Starts for Lucky2013_25:

(Start: 1 @14968 has 40 MA's), (3, 14980), (9, 15055), (11, 15112), (12, 15124), (13, 15142), (14, 15205), (16, 15244), (18, 15370), (19, 15379), (21, 15391), (22, 15403),

Gene: MadKillah_46 Start: 22935, Stop: 23321, Start Num: 8

Candidate Starts for MadKillah_46:

(Start: 2 @22896 has 4 MA's), (Start: 4 @22902 has 1 MA's), (Start: 5 @22914 has 3 MA's), (Start: 8 @22935 has 23 MA's), (15, 23133), (22, 23307),

Gene: Marleymoo_28 Start: 17560, Stop: 18009, Start Num: 1

Candidate Starts for Marleymoo_28:

(Start: 1 @17560 has 40 MA's), (3, 17572), (10, 17689), (11, 17704), (14, 17797), (17, 17848), (18, 17962), (19, 17971), (21, 17983),

Gene: MiaZeal_25 Start: 14659, Stop: 15108, Start Num: 1

Candidate Starts for MiaZeal_25:

(Start: 1 @14659 has 40 MA's), (3, 14671), (6, 14692), (9, 14746), (11, 14803), (12, 14815), (13, 14833), (14, 14896), (16, 14935), (18, 15061), (19, 15070), (21, 15082), (22, 15094),

Gene: Minerva_27 Start: 16964, Stop: 17413, Start Num: 1

Candidate Starts for Minerva_27:

(Start: 1 @16964 has 40 MA's), (3, 16976), (6, 16997), (10, 17093), (11, 17108), (14, 17201), (17, 17252), (18, 17366), (21, 17387),

Gene: Mori_44 Start: 22584, Stop: 22970, Start Num: 8

Candidate Starts for Mori_44:

(Start: 2 @22545 has 4 MA's), (Start: 4 @22551 has 1 MA's), (Start: 5 @22563 has 3 MA's), (Start: 8 @22584 has 23 MA's), (15, 22782), (22, 22956),

Gene: Murai_45 Start: 22774, Stop: 23160, Start Num: 8

Candidate Starts for Murai_45:

(Start: 2 @22735 has 4 MA's), (Start: 4 @22741 has 1 MA's), (Start: 5 @22753 has 3 MA's), (Start: 8 @22774 has 23 MA's), (15, 22972), (22, 23146),

Gene: Nekros_25 Start: 16905, Stop: 17354, Start Num: 1

Candidate Starts for Nekros_25:

(Start: 1 @16905 has 40 MA's), (3, 16917), (9, 16992), (11, 17049), (12, 17061), (13, 17079), (14, 17142), (18, 17307), (19, 17316), (21, 17328), (22, 17340),

Gene: Nibley_20 Start: 13587, Stop: 14036, Start Num: 1

Candidate Starts for Nibley_20:

(Start: 1 @13587 has 40 MA's), (3, 13599), (9, 13674), (11, 13731), (12, 13743), (13, 13761), (14, 13824), (16, 13863), (18, 13989), (19, 13998), (21, 14010), (22, 14022),

Gene: NiebruSaylor_44 Start: 22585, Stop: 22971, Start Num: 8

Candidate Starts for NiebruSaylor_44:

(Start: 2 @22546 has 4 MA's), (Start: 4 @22552 has 1 MA's), (Start: 5 @22564 has 3 MA's), (Start: 8 @22585 has 23 MA's), (15, 22783), (22, 22957),

Gene: NihilNomen_26 Start: 16961, Stop: 17410, Start Num: 1

Candidate Starts for NihilNomen_26:

(Start: 1 @16961 has 40 MA's), (3, 16973), (6, 16994), (10, 17090), (11, 17105), (14, 17198), (17, 17249), (18, 17363), (21, 17384),

Gene: Odette_26 Start: 16442, Stop: 16891, Start Num: 1

Candidate Starts for Odette_26:

(Start: 1 @16442 has 40 MA's), (3, 16454), (6, 16475), (10, 16571), (11, 16586), (14, 16679), (17, 16730), (18, 16844), (21, 16865),

Gene: Omega_27 Start: 18585, Stop: 19034, Start Num: 1

Candidate Starts for Omega_27:

(Start: 1 @18585 has 40 MA's), (3, 18597), (9, 18672), (11, 18729), (12, 18741), (13, 18759), (14, 18822), (16, 18861), (18, 18987), (19, 18996), (21, 19008), (22, 19020),

Gene: Optimus_25 Start: 16539, Stop: 16988, Start Num: 1

Candidate Starts for Optimus_25:

(Start: 1 @16539 has 40 MA's), (3, 16551), (6, 16572), (10, 16668), (11, 16683), (14, 16776), (17, 16827), (18, 16941), (21, 16962),

Gene: Phoebus_27 Start: 17186, Stop: 17635, Start Num: 1

Candidate Starts for Phoebus_27:

(Start: 1 @17186 has 40 MA's), (3, 17198), (6, 17219), (10, 17315), (11, 17330), (14, 17423), (17, 17474), (18, 17588), (21, 17609),

Gene: Porcelain_25 Start: 14659, Stop: 15108, Start Num: 1

Candidate Starts for Porcelain_25:

(Start: 1 @14659 has 40 MA's), (3, 14671), (6, 14692), (9, 14746), (11, 14803), (12, 14815), (13, 14833), (14, 14896), (16, 14935), (18, 15061), (19, 15070), (21, 15082), (22, 15094),

Gene: Pound_27 Start: 17278, Stop: 17727, Start Num: 1
Candidate Starts for Pound_27:
(Start: 1 @17278 has 40 MA's), (3, 17290), (6, 17311), (10, 17407), (11, 17422), (14, 17515), (17, 17566), (18, 17680), (21, 17701),

Gene: Rearden_22 Start: 13644, Stop: 14093, Start Num: 1
Candidate Starts for Rearden_22:
(Start: 1 @13644 has 40 MA's), (3, 13656), (6, 13677), (9, 13731), (11, 13788), (12, 13800), (13, 13818), (14, 13881), (16, 13920), (18, 14046), (19, 14055), (21, 14067), (22, 14079),

Gene: Redno2_26 Start: 16670, Stop: 17119, Start Num: 1
Candidate Starts for Redno2_26:
(Start: 1 @16670 has 40 MA's), (3, 16682), (6, 16703), (10, 16799), (11, 16814), (14, 16907), (17, 16958), (18, 17072), (21, 17093),

Gene: Ryadel_49 Start: 24037, Stop: 24444, Start Num: 5
Candidate Starts for Ryadel_49:
(Start: 2 @24019 has 4 MA's), (Start: 4 @24025 has 1 MA's), (Start: 5 @24037 has 3 MA's), (Start: 8 @24058 has 23 MA's), (15, 24256), (20, 24406), (22, 24430),

Gene: Schatzie_25 Start: 16211, Stop: 16660, Start Num: 1
Candidate Starts for Schatzie_25:
(Start: 1 @16211 has 40 MA's), (3, 16223), (6, 16244), (10, 16340), (11, 16355), (14, 16448), (17, 16499), (18, 16613), (21, 16634),

Gene: SchoolBus_45 Start: 22999, Stop: 23385, Start Num: 8
Candidate Starts for SchoolBus_45:
(Start: 2 @22960 has 4 MA's), (Start: 4 @22966 has 1 MA's), (Start: 5 @22978 has 3 MA's), (7, 22993), (Start: 8 @22999 has 23 MA's), (15, 23197), (22, 23371),

Gene: Schuy_46 Start: 22932, Stop: 23318, Start Num: 8
Candidate Starts for Schuy_46:
(Start: 2 @22893 has 4 MA's), (Start: 4 @22899 has 1 MA's), (Start: 5 @22911 has 3 MA's), (Start: 8 @22932 has 23 MA's), (15, 23130), (22, 23304),

Gene: Shaboozey_19 Start: 13070, Stop: 13519, Start Num: 1
Candidate Starts for Shaboozey_19:
(Start: 1 @13070 has 40 MA's), (3, 13082), (6, 13103), (9, 13157), (11, 13214), (12, 13226), (13, 13244), (14, 13307), (16, 13346), (18, 13472), (19, 13481), (21, 13493), (22, 13505),

Gene: Shida_45 Start: 22839, Stop: 23225, Start Num: 8
Candidate Starts for Shida_45:
(Start: 2 @22800 has 4 MA's), (Start: 4 @22806 has 1 MA's), (Start: 5 @22818 has 3 MA's), (Start: 8 @22839 has 23 MA's), (15, 23037), (22, 23211),

Gene: Smooch_47 Start: 24127, Stop: 24513, Start Num: 8
Candidate Starts for Smooch_47:
(Start: 2 @24088 has 4 MA's), (Start: 4 @24094 has 1 MA's), (Start: 5 @24106 has 3 MA's), (Start: 8 @24127 has 23 MA's), (15, 24325), (22, 24499),

Gene: Squint_24 Start: 14786, Stop: 15235, Start Num: 1
Candidate Starts for Squint_24:

(Start: 1 @14786 has 40 MA's), (3, 14798), (9, 14873), (11, 14930), (12, 14942), (13, 14960), (14, 15023), (16, 15062), (18, 15188), (19, 15197), (21, 15209), (22, 15221),

Gene: Superphikiman_25 Start: 14840, Stop: 15289, Start Num: 1

Candidate Starts for Superphikiman_25:

(Start: 1 @14840 has 40 MA's), (3, 14852), (6, 14873), (9, 14927), (11, 14984), (12, 14996), (13, 15014), (14, 15077), (16, 15116), (18, 15242), (19, 15251), (21, 15263), (22, 15275),

Gene: TelAviv_42 Start: 22993, Stop: 23379, Start Num: 8

Candidate Starts for TelAviv_42:

(Start: 2 @22954 has 4 MA's), (Start: 4 @22960 has 1 MA's), (Start: 5 @22972 has 3 MA's), (7, 22987), (Start: 8 @22993 has 23 MA's), (15, 23191), (22, 23365),

Gene: Thibault_23 Start: 16470, Stop: 16919, Start Num: 1

Candidate Starts for Thibault_23:

(Start: 1 @16470 has 40 MA's), (3, 16482), (6, 16503), (10, 16599), (11, 16614), (14, 16707), (17, 16758), (18, 16872), (21, 16893),

Gene: ThreeRngTarjay_26 Start: 17036, Stop: 17485, Start Num: 1

Candidate Starts for ThreeRngTarjay_26:

(Start: 1 @17036 has 40 MA's), (3, 17048), (6, 17069), (10, 17165), (11, 17180), (14, 17273), (17, 17324), (18, 17438), (21, 17459),

Gene: Vagabond_45 Start: 22826, Stop: 23212, Start Num: 8

Candidate Starts for Vagabond_45:

(Start: 2 @22787 has 4 MA's), (Start: 4 @22793 has 1 MA's), (Start: 5 @22805 has 3 MA's), (Start: 8 @22826 has 23 MA's), (15, 23024), (22, 23198),

Gene: Vorrps_44 Start: 22585, Stop: 22971, Start Num: 8

Candidate Starts for Vorrps_44:

(Start: 2 @22546 has 4 MA's), (Start: 4 @22552 has 1 MA's), (Start: 5 @22564 has 3 MA's), (Start: 8 @22585 has 23 MA's), (15, 22783), (22, 22957),

Gene: Wanda_28 Start: 16479, Stop: 16928, Start Num: 1

Candidate Starts for Wanda_28:

(Start: 1 @16479 has 40 MA's), (3, 16491), (6, 16512), (10, 16608), (11, 16623), (14, 16716), (17, 16767), (18, 16881), (21, 16902),

Gene: Wildflower_45 Start: 22571, Stop: 22957, Start Num: 8

Candidate Starts for Wildflower_45:

(Start: 2 @22532 has 4 MA's), (Start: 4 @22538 has 1 MA's), (Start: 5 @22550 has 3 MA's), (Start: 8 @22571 has 23 MA's), (15, 22769), (22, 22943),

Gene: Winget_46 Start: 23244, Stop: 23651, Start Num: 5

Candidate Starts for Winget_46:

(Start: 2 @23226 has 4 MA's), (Start: 4 @23232 has 1 MA's), (Start: 5 @23244 has 3 MA's), (7, 23259), (Start: 8 @23265 has 23 MA's), (15, 23463), (22, 23637),

Gene: Wogge42_44 Start: 22904, Stop: 23290, Start Num: 8

Candidate Starts for Wogge42_44:

(Start: 2 @22865 has 4 MA's), (Start: 4 @22871 has 1 MA's), (Start: 5 @22883 has 3 MA's), (Start: 8 @22904 has 23 MA's), (15, 23102), (22, 23276),

Gene: Xiaokay_24 Start: 16486, Stop: 16935, Start Num: 1

Candidate Starts for Xiaokay_24:

(Start: 1 @16486 has 40 MA's), (3, 16498), (6, 16519), (10, 16615), (11, 16630), (14, 16723), (17, 16774), (18, 16888), (21, 16909),

Gene: Yeet_25 Start: 16212, Stop: 16661, Start Num: 1

Candidate Starts for Yeet_25:

(Start: 1 @16212 has 40 MA's), (3, 16224), (6, 16245), (10, 16341), (11, 16356), (14, 16449), (17, 16500), (18, 16614), (21, 16635),

Gene: YoyoKar_43 Start: 22516, Stop: 22935, Start Num: 4

Candidate Starts for YoyoKar_43:

(Start: 2 @22510 has 4 MA's), (Start: 4 @22516 has 1 MA's), (Start: 5 @22528 has 3 MA's), (Start: 8 @22549 has 23 MA's), (15, 22747), (22, 22921),

Gene: YungJamal_48 Start: 23304, Stop: 23690, Start Num: 8

Candidate Starts for YungJamal_48:

(Start: 2 @23265 has 4 MA's), (Start: 4 @23271 has 1 MA's), (Start: 5 @23283 has 3 MA's), (Start: 8 @23304 has 23 MA's), (15, 23502), (22, 23676),

Gene: Zakhe101_45 Start: 22682, Stop: 23101, Start Num: 4

Candidate Starts for Zakhe101_45:

(Start: 2 @22676 has 4 MA's), (Start: 4 @22682 has 1 MA's), (Start: 5 @22694 has 3 MA's), (Start: 8 @22715 has 23 MA's), (15, 22913), (22, 23087),

Gene: Zebo_45 Start: 22999, Stop: 23385, Start Num: 8

Candidate Starts for Zebo_45:

(Start: 2 @22960 has 4 MA's), (Start: 4 @22966 has 1 MA's), (Start: 5 @22978 has 3 MA's), (7, 22993), (Start: 8 @22999 has 23 MA's), (15, 23197), (22, 23371),

Gene: Zelink_28 Start: 17064, Stop: 17513, Start Num: 1

Candidate Starts for Zelink_28:

(Start: 1 @17064 has 40 MA's), (3, 17076), (6, 17097), (10, 17193), (11, 17208), (14, 17301), (17, 17352), (18, 17466), (21, 17487),