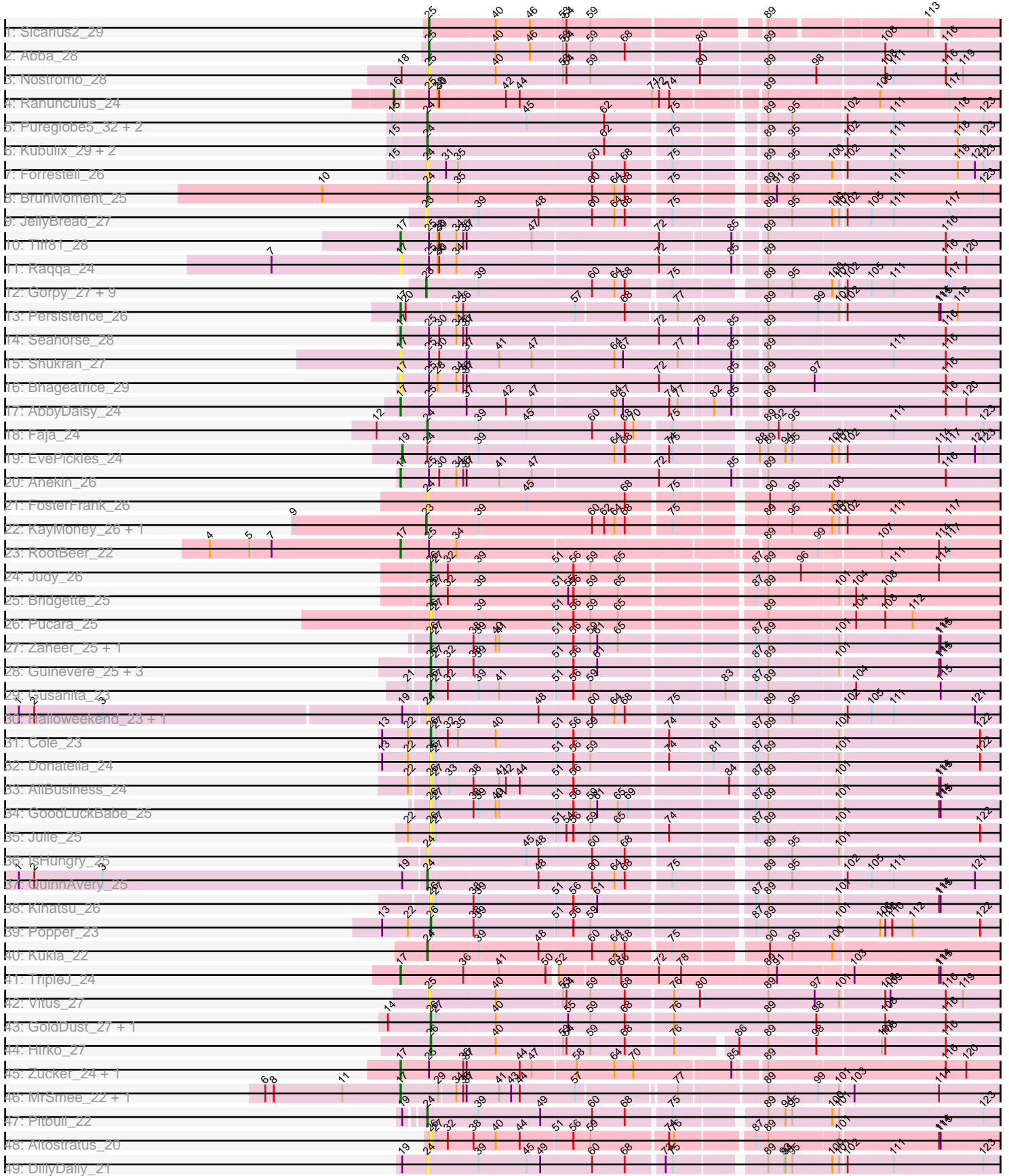


Pham 224547



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 224547 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224547 has 71 members, 32 are drafts.

Phages represented in each track:

- Track 1 : Sicarius2_29
- Track 2 : Abba_28
- Track 3 : Nostromo_28
- Track 4 : Ranunculus_24
- Track 5 : Pureglobe5_32, Beagle_31, RazzB_25
- Track 6 : Kubulix_29, MellowYellow_27, NyleyClemson_26
- Track 7 : Forrestell_26
- Track 8 : BruhMoment_25
- Track 9 : JellyBread_27
- Track 10 : Tiff81_28
- Track 11 : Raqqa_24
- Track 12 : Gorpy_27, Phrank15_26, Lawnathon_27, AdaS_27, Vopal_28, Raphaella_27, MUWow_26, Sakai_27, Isolde_27, BillyTP_27
- Track 13 : Persistence_26
- Track 14 : Seahorse_28
- Track 15 : Shukran_27
- Track 16 : Bhageatrice_29
- Track 17 : AbbyDaisy_24
- Track 18 : Faja_24
- Track 19 : EvePickles_24
- Track 20 : Anekin_26
- Track 21 : FosterFrank_26
- Track 22 : KayMoney_26, ChuckDuck_26
- Track 23 : RootBeer_22
- Track 24 : Judy_26
- Track 25 : Bridgette_25
- Track 26 : Pucara_25
- Track 27 : Zaheer_25, Ryan_25
- Track 28 : Guinevere_25, Nandita_25, Lenoxika_25, Schism_25
- Track 29 : Gusanita_23
- Track 30 : Halloweekend_23, Ichiang_23
- Track 31 : Cole_23
- Track 32 : Donatella_24
- Track 33 : AllBusiness_24
- Track 34 : GoodLuckBabe_25
- Track 35 : Julie_25
- Track 36 : IsHungry_25

- Track 37 : QuinnAvery_25
- Track 38 : Kihatsu_26
- Track 39 : Popper_23
- Track 40 : Kukla_22
- Track 41 : TripleJ_24
- Track 42 : Vitus_27
- Track 43 : GoldDust_27, Vibaki_27
- Track 44 : Hirko_27
- Track 45 : Zucker_24, Bauer_25
- Track 46 : MrSmee_22, Skitty_26
- Track 47 : Pitbull_22
- Track 48 : Altostratus_20
- Track 49 : DillyDally_21

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

The start number called the most often in the published annotations is 26, it was called in 10 of the 39 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AllBusiness_24, Altostratus_20, Bridgette_25, Cole_23, Donatella_24, GoldDust_27, GoodLuckBabe_25, Guinevere_25, Gusanita_23, Hirko_27, Judy_26, Julie_25, Kihatsu_26, Lenoxika_25, Nandita_25, Popper_23, Pucara_25, Ryan_25, Schism_25, Vibaki_27, Zaheer_25,

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

-

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

- Abba_28, AbbyDaisy_24, AdaS_27, Anekin_26, Bauer_25, Beagle_31, Bhageatrice_29, BillyTP_27, BruhMoment_25, ChuckDuck_26, DillyDally_21, EvePickles_24, Faja_24, Forrestell_26, FosterFrank_26, Gorpy_27, Halloweekend_23, Ichiang_23, IsHungry_25, Isolde_27, JellyBread_27, KayMoney_26, Kubulix_29, Kukla_22, Lawnathon_27, MUWow_26, MellowYellow_27, MrSmee_22, Nostromo_28, NyleyClemson_26, Persistence_26, Phrank15_26, Pitbull_22, Pureglobe5_32, QuinnAvery_25, Ranunculus_24, Raphaella_27, Raqqa_24, RazzB_25, RootBeer_22, Sakai_27, Seahorse_28, Shukran_27, Sicarius2_29, Skitty_26, Tiff81_28, TripleJ_24, Vitus_27, Vopal_28, Zucker_24,

Summary by start number:

Start 16:

- Found in 1 of 71 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ranunculus_24 (AP),

Start 17:

- Found in 14 of 71 (19.7%) of genes in pham

- Manual Annotations of this start: 10 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AbbyDaisy_24 (AY), Anekin_26 (AY), Bauer_25 (FN), Bhageatrice_29 (AY), MrSmees_22 (FQ), Persistence_26 (AY), Raqqa_24 (AY), RootBeer_22 (FA), Seahorse_28 (AY), Shukran_27 (AY), Skitty_26 (FQ), Tiff81_28 (AY), TripleJ_24 (FJ), Zucker_24 (FN),

Start 19:

- Found in 6 of 71 (8.5%) of genes in pham
- Manual Annotations of this start: 1 of 39
- Called 16.7% of time when present
- Phage (with cluster) where this start called: EvePickles_24 (AY),

Start 23:

- Found in 13 of 71 (18.3%) of genes in pham
- Manual Annotations of this start: 7 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AdaS_27 (AY), BillyTP_27 (AY), ChuckDuck_26 (FA), Gorpy_27 (AY), Isolde_27 (AY), JellyBread_27 (AY), KayMoney_26 (FA), Lawnathon_27 (AY), MUWow_26 (AY), Phrank15_26 (AY), Raphaella_27 (AY), Sakai_27 (AY), Vopal_28 (AY),

Start 24:

- Found in 18 of 71 (25.4%) of genes in pham
- Manual Annotations of this start: 8 of 39
- Called 94.4% of time when present
- Phage (with cluster) where this start called: Beagle_31 (AP2), BruhMoment_25 (AP3), DillyDally_21 (singleton), Faja_24 (AY), Forrestell_26 (AP2), FosterFrank_26 (FA), Halloween_23 (FF), Ichiang_23 (FF), IsHungry_25 (FF), Kubulix_29 (AP2), Kukla_22 (FJ), MellowYellow_27 (AP2), NyleyClemson_26 (AP2), Pitbull_22 (FQ), Pureglobe5_32 (AP2), QuinnAvery_25 (FF), RazzB_25 (AP2),

Start 25:

- Found in 15 of 71 (21.1%) of genes in pham
- Manual Annotations of this start: 2 of 39
- Called 26.7% of time when present
- Phage (with cluster) where this start called: Abba_28 (AO3), Nostromo_28 (AO3), Sicarius2_29 (AO2), Vitus_27 (FL),

Start 26:

- Found in 21 of 71 (29.6%) of genes in pham
- Manual Annotations of this start: 10 of 39
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AllBusiness_24 (FF), Altostratus_20 (FS), Bridgette_25 (FA), Cole_23 (FF), Donatella_24 (FF), GoldDust_27 (FL), GoodLuckBabe_25 (FF), Guinevere_25 (FF), Gusanita_23 (FF), Hirko_27 (FL), Judy_26 (FA), Julie_25 (FF), Kihatsu_26 (FF), Lenoxika_25 (FF), Nandita_25 (FF), Popper_23 (FF), Pucara_25 (FA), Ryan_25 (FF), Schism_25 (FF), Vibaki_27 (FL), Zaheer_25 (FF),

Summary by clusters:

There are 14 clusters represented in this pham: FQ, singleton, FS, AP, AP2, AP3, FA, AO3, AO2, FF, AY, FJ, FL, FN,

Info for manual annotations of cluster AO2:

- Start number 25 was manually annotated 1 time for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 25 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster AP:

- Start number 16 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP2:

- Start number 24 was manually annotated 3 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 24 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AY:

- Start number 17 was manually annotated 5 times for cluster AY.
- Start number 19 was manually annotated 1 time for cluster AY.
- Start number 23 was manually annotated 6 times for cluster AY.
- Start number 24 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster FA:

- Start number 17 was manually annotated 1 time for cluster FA.
- Start number 23 was manually annotated 1 time for cluster FA.
- Start number 26 was manually annotated 2 times for cluster FA.

Info for manual annotations of cluster FF:

- Start number 24 was manually annotated 1 time for cluster FF.
- Start number 26 was manually annotated 6 times for cluster FF.

Info for manual annotations of cluster FJ:

- Start number 17 was manually annotated 1 time for cluster FJ.
- Start number 24 was manually annotated 1 time for cluster FJ.

Info for manual annotations of cluster FL:

- Start number 26 was manually annotated 2 times for cluster FL.

Info for manual annotations of cluster FN:

- Start number 17 was manually annotated 2 times for cluster FN.

Info for manual annotations of cluster FQ:

- Start number 17 was manually annotated 1 time for cluster FQ.
- Start number 24 was manually annotated 1 time for cluster FQ.

Gene Information:

Gene: Abba_28 Start: 23837, Stop: 24787, Start Num: 25

Candidate Starts for Abba_28:

(Start: 25 @23837 has 2 MA's), (40, 23951), (46, 24011), (53, 24065), (54, 24071), (59, 24110), (68, 24167), (80, 24287), (89, 24389), (108, 24572), (116, 24677),

Gene: AbbyDaisy_24 Start: 18360, Stop: 19346, Start Num: 17

Candidate Starts for AbbyDaisy_24:

(Start: 17 @18360 has 10 MA's), (Start: 25 @18408 has 2 MA's), (37, 18471), (42, 18537), (47, 18582), (64, 18714), (67, 18729), (74, 18810), (77, 18822), (82, 18876), (85, 18903), (89, 18945), (116, 19245), (120, 19281),

Gene: AdaS_27 Start: 19401, Stop: 20348, Start Num: 23

Candidate Starts for AdaS_27:

(Start: 23 @19401 has 7 MA's), (39, 19488), (60, 19680), (64, 19716), (68, 19734), (75, 19806), (89, 19947), (95, 19983), (100, 20049), (101, 20061), (102, 20070), (105, 20112), (111, 20151), (117, 20247),

Gene: AllBusiness_24 Start: 18932, Stop: 19873, Start Num: 26

Candidate Starts for AllBusiness_24:

(22, 18899), (Start: 26 @18932 has 10 MA's), (27, 18941), (33, 18965), (38, 19004), (41, 19049), (42, 19061), (44, 19085), (51, 19145), (56, 19175), (84, 19424), (87, 19460), (89, 19478), (101, 19589), (114, 19754), (115, 19757),

Gene: Altostratus_20 Start: 16612, Stop: 17556, Start Num: 26

Candidate Starts for Altostratus_20:

(Start: 26 @16612 has 10 MA's), (27, 16621), (32, 16642), (38, 16687), (40, 16726), (44, 16768), (51, 16828), (56, 16858), (59, 16885), (74, 17011), (76, 17020), (87, 17143), (89, 17161), (101, 17272), (114, 17437), (115, 17440),

Gene: Anekin_26 Start: 19364, Stop: 20353, Start Num: 17

Candidate Starts for Anekin_26:

(Start: 17 @19364 has 10 MA's), (Start: 25 @19412 has 2 MA's), (30, 19430), (34, 19457), (36, 19469), (37, 19475), (41, 19529), (47, 19586), (72, 19796), (85, 19907), (89, 19949), (116, 20252),

Gene: Bauer_25 Start: 19072, Stop: 20058, Start Num: 17

Candidate Starts for Bauer_25:

(Start: 17 @19072 has 10 MA's), (Start: 25 @19120 has 2 MA's), (36, 19177), (37, 19183), (44, 19273), (47, 19294), (58, 19366), (64, 19426), (70, 19459), (85, 19615), (89, 19657), (116, 19957), (120, 19993),

Gene: Beagle_31 Start: 18239, Stop: 19177, Start Num: 24

Candidate Starts for Beagle_31:

(15, 18191), (Start: 24 @18239 has 8 MA's), (45, 18410), (62, 18539), (75, 18644), (89, 18776), (95, 18812), (102, 18899), (111, 18980), (118, 19091), (123, 19133),

Gene: Bhageatrice_29 Start: 20688, Stop: 21674, Start Num: 17

Candidate Starts for Bhageatrice_29:

(Start: 17 @20688 has 10 MA's), (Start: 25 @20736 has 2 MA's), (28, 20751), (34, 20781), (36, 20793), (37, 20799), (72, 21120), (85, 21231), (89, 21273), (97, 21351), (116, 21573),

Gene: BillyTP_27 Start: 19185, Stop: 20132, Start Num: 23

Candidate Starts for BillyTP_27:

(Start: 23 @19185 has 7 MA's), (39, 19272), (60, 19464), (64, 19500), (68, 19518), (75, 19590), (89, 19731), (95, 19767), (100, 19833), (101, 19845), (102, 19854), (105, 19896), (111, 19935), (117,

20031),

Gene: Bridgette_25 Start: 19437, Stop: 20381, Start Num: 26

Candidate Starts for Bridgette_25:

(Start: 26 @19437 has 10 MA's), (27, 19446), (32, 19467), (39, 19521), (51, 19653), (55, 19674), (56, 19683), (59, 19710), (65, 19755), (87, 19968), (89, 19986), (101, 20097), (104, 20121), (108, 20172),

Gene: BruhMoment_25 Start: 17728, Stop: 18663, Start Num: 24

Candidate Starts for BruhMoment_25:

(10, 17551), (Start: 24 @17728 has 8 MA's), (35, 17779), (60, 18004), (64, 18040), (68, 18058), (75, 18130), (89, 18262), (91, 18271), (95, 18298), (111, 18466), (123, 18619),

Gene: ChuckDuck_26 Start: 19302, Stop: 20249, Start Num: 23

Candidate Starts for ChuckDuck_26:

(9, 19077), (Start: 23 @19302 has 7 MA's), (39, 19389), (60, 19581), (62, 19602), (64, 19617), (68, 19635), (75, 19707), (89, 19848), (95, 19884), (100, 19950), (101, 19962), (102, 19971), (111, 20052), (117, 20148),

Gene: Cole_23 Start: 18430, Stop: 19374, Start Num: 26

Candidate Starts for Cole_23:

(13, 18352), (22, 18397), (Start: 26 @18430 has 10 MA's), (27, 18439), (32, 18460), (35, 18478), (40, 18544), (51, 18646), (56, 18676), (59, 18703), (74, 18829), (81, 18898), (87, 18961), (89, 18979), (101, 19090), (122, 19327),

Gene: DillyDally_21 Start: 18052, Stop: 18999, Start Num: 24

Candidate Starts for DillyDally_21:

(Start: 19 @18010 has 1 MA's), (Start: 24 @18052 has 8 MA's), (39, 18136), (45, 18220), (49, 18244), (60, 18331), (68, 18385), (73, 18445), (75, 18457), (89, 18598), (93, 18619), (94, 18622), (95, 18634), (100, 18700), (101, 18712), (102, 18721), (111, 18802), (123, 18955),

Gene: Donatella_24 Start: 18894, Stop: 19838, Start Num: 26

Candidate Starts for Donatella_24:

(13, 18816), (22, 18861), (Start: 26 @18894 has 10 MA's), (27, 18903), (51, 19110), (56, 19140), (59, 19167), (74, 19293), (81, 19362), (87, 19425), (89, 19443), (101, 19554), (122, 19791),

Gene: EvePickles_24 Start: 17997, Stop: 18980, Start Num: 19

Candidate Starts for EvePickles_24:

(Start: 19 @17997 has 1 MA's), (Start: 24 @18036 has 8 MA's), (39, 18120), (64, 18348), (68, 18366), (74, 18432), (75, 18438), (88, 18564), (89, 18579), (94, 18603), (95, 18615), (100, 18681), (101, 18693), (102, 18702), (114, 18861), (117, 18879), (121, 18921), (123, 18936),

Gene: Faja_24 Start: 17929, Stop: 18873, Start Num: 24

Candidate Starts for Faja_24:

(12, 17845), (Start: 24 @17929 has 8 MA's), (39, 18013), (45, 18097), (60, 18205), (68, 18259), (70, 18274), (75, 18331), (89, 18472), (92, 18484), (95, 18508), (111, 18676), (123, 18829),

Gene: Forrestell_26 Start: 16947, Stop: 17885, Start Num: 24

Candidate Starts for Forrestell_26:

(15, 16899), (Start: 24 @16947 has 8 MA's), (31, 16980), (35, 17001), (60, 17226), (68, 17280), (75, 17352), (89, 17484), (95, 17520), (100, 17586), (102, 17607), (111, 17688), (118, 17799), (121, 17826), (123, 17841),

Gene: FosterFrank_26 Start: 19374, Stop: 20324, Start Num: 24

Candidate Starts for FosterFrank_26:

(Start: 24 @19374 has 8 MA's), (45, 19545), (68, 19707), (75, 19779), (90, 19923), (95, 19962), (100, 20028),

Gene: GoldDust_27 Start: 25550, Stop: 26509, Start Num: 26

Candidate Starts for GoldDust_27:

(14, 25475), (Start: 26 @25550 has 10 MA's), (27, 25559), (40, 25658), (55, 25781), (59, 25817), (68, 25874), (76, 25952), (89, 26111), (98, 26183), (108, 26297), (116, 26402),

Gene: GoodLuckBabe_25 Start: 19039, Stop: 19983, Start Num: 26

Candidate Starts for GoodLuckBabe_25:

(Start: 26 @19039 has 10 MA's), (27, 19048), (38, 19114), (39, 19123), (40, 19153), (41, 19159), (51, 19255), (56, 19285), (59, 19312), (61, 19324), (65, 19357), (69, 19375), (87, 19570), (89, 19588), (101, 19699), (114, 19864), (115, 19867),

Gene: Gorpy_27 Start: 19410, Stop: 20357, Start Num: 23

Candidate Starts for Gorpy_27:

(Start: 23 @19410 has 7 MA's), (39, 19497), (60, 19689), (64, 19725), (68, 19743), (75, 19815), (89, 19956), (95, 19992), (100, 20058), (101, 20070), (102, 20079), (105, 20121), (111, 20160), (117, 20256),

Gene: Guinevere_25 Start: 18629, Stop: 19573, Start Num: 26

Candidate Starts for Guinevere_25:

(Start: 26 @18629 has 10 MA's), (27, 18638), (32, 18659), (38, 18704), (39, 18713), (51, 18845), (56, 18875), (61, 18914), (87, 19160), (89, 19178), (101, 19289), (114, 19454), (115, 19457),

Gene: Gusanita_23 Start: 18476, Stop: 19420, Start Num: 26

Candidate Starts for Gusanita_23:

(21, 18443), (Start: 26 @18476 has 10 MA's), (27, 18485), (32, 18506), (39, 18560), (41, 18596), (51, 18692), (56, 18722), (59, 18749), (83, 18965), (87, 19007), (89, 19025), (104, 19160), (115, 19304),

Gene: Halloweekend_23 Start: 18394, Stop: 19338, Start Num: 24

Candidate Starts for Halloweekend_23:

(1, 17698), (2, 17725), (3, 17845), (Start: 19 @18361 has 1 MA's), (Start: 24 @18394 has 8 MA's), (48, 18583), (60, 18670), (64, 18706), (68, 18724), (75, 18796), (89, 18937), (95, 18973), (102, 19060), (105, 19102), (111, 19141), (121, 19279),

Gene: Hirko_27 Start: 25896, Stop: 26837, Start Num: 26

Candidate Starts for Hirko_27:

(Start: 26 @25896 has 10 MA's), (40, 26004), (53, 26118), (54, 26124), (59, 26163), (68, 26220), (76, 26298), (86, 26391), (89, 26439), (98, 26511), (107, 26619), (108, 26625), (116, 26730),

Gene: Ichiang_23 Start: 18411, Stop: 19355, Start Num: 24

Candidate Starts for Ichiang_23:

(1, 17715), (2, 17742), (3, 17862), (Start: 19 @18378 has 1 MA's), (Start: 24 @18411 has 8 MA's), (48, 18600), (60, 18687), (64, 18723), (68, 18741), (75, 18813), (89, 18954), (95, 18990), (102, 19077), (105, 19119), (111, 19158), (121, 19296),

Gene: IsHungry_25 Start: 19021, Stop: 19965, Start Num: 24

Candidate Starts for IsHungry_25:

(Start: 24 @19021 has 8 MA's), (45, 19189), (48, 19210), (60, 19297), (68, 19351), (89, 19564), (95, 19600), (101, 19678),

Gene: Isolde_27 Start: 19236, Stop: 20183, Start Num: 23

Candidate Starts for Isolde_27:

(Start: 23 @19236 has 7 MA's), (39, 19323), (60, 19515), (64, 19551), (68, 19569), (75, 19641), (89, 19782), (95, 19818), (100, 19884), (101, 19896), (102, 19905), (105, 19947), (111, 19986), (117, 20082),

Gene: JellyBread_27 Start: 19394, Stop: 20341, Start Num: 23

Candidate Starts for JellyBread_27:

(Start: 23 @19394 has 7 MA's), (39, 19481), (48, 19586), (60, 19673), (64, 19709), (68, 19727), (75, 19799), (89, 19940), (95, 19976), (100, 20042), (101, 20054), (102, 20063), (105, 20105), (111, 20144), (117, 20240),

Gene: Judy_26 Start: 19687, Stop: 20631, Start Num: 26

Candidate Starts for Judy_26:

(Start: 26 @19687 has 10 MA's), (27, 19696), (32, 19717), (39, 19771), (51, 19903), (56, 19933), (59, 19960), (65, 20005), (87, 20218), (89, 20236), (96, 20284), (111, 20437), (114, 20512),

Gene: Julie_25 Start: 19080, Stop: 20024, Start Num: 26

Candidate Starts for Julie_25:

(22, 19047), (Start: 26 @19080 has 10 MA's), (27, 19089), (51, 19296), (54, 19314), (56, 19326), (59, 19353), (65, 19398), (74, 19479), (87, 19611), (89, 19629), (101, 19740), (122, 19977),

Gene: KayMoney_26 Start: 19306, Stop: 20253, Start Num: 23

Candidate Starts for KayMoney_26:

(9, 19081), (Start: 23 @19306 has 7 MA's), (39, 19393), (60, 19585), (62, 19606), (64, 19621), (68, 19639), (75, 19711), (89, 19852), (95, 19888), (100, 19954), (101, 19966), (102, 19975), (111, 20056), (117, 20152),

Gene: Kihatsu_26 Start: 18954, Stop: 19898, Start Num: 26

Candidate Starts for Kihatsu_26:

(Start: 26 @18954 has 10 MA's), (27, 18963), (38, 19029), (39, 19038), (51, 19170), (56, 19200), (61, 19239), (87, 19485), (89, 19503), (101, 19614), (114, 19779), (115, 19782),

Gene: Kubulix_29 Start: 18432, Stop: 19370, Start Num: 24

Candidate Starts for Kubulix_29:

(15, 18384), (Start: 24 @18432 has 8 MA's), (62, 18732), (75, 18837), (89, 18969), (95, 19005), (102, 19092), (111, 19173), (118, 19284), (123, 19326),

Gene: Kukla_22 Start: 17420, Stop: 18367, Start Num: 24

Candidate Starts for Kukla_22:

(Start: 24 @17420 has 8 MA's), (39, 17504), (48, 17609), (60, 17696), (64, 17732), (68, 17750), (75, 17822), (90, 17966), (95, 18005), (100, 18071),

Gene: Lawnathon_27 Start: 19330, Stop: 20277, Start Num: 23

Candidate Starts for Lawnathon_27:

(Start: 23 @19330 has 7 MA's), (39, 19417), (60, 19609), (64, 19645), (68, 19663), (75, 19735), (89, 19876), (95, 19912), (100, 19978), (101, 19990), (102, 19999), (105, 20041), (111, 20080), (117, 20176),

Gene: Lenoxika_25 Start: 18625, Stop: 19569, Start Num: 26

Candidate Starts for Lenoxika_25:

(Start: 26 @18625 has 10 MA's), (27, 18634), (32, 18655), (38, 18700), (39, 18709), (51, 18841), (56, 18871), (61, 18910), (87, 19156), (89, 19174), (101, 19285), (114, 19450), (115, 19453),

Gene: MUWow_26 Start: 19494, Stop: 20441, Start Num: 23

Candidate Starts for MUWow_26:

(Start: 23 @19494 has 7 MA's), (39, 19581), (60, 19773), (64, 19809), (68, 19827), (75, 19899), (89, 20040), (95, 20076), (100, 20142), (101, 20154), (102, 20163), (105, 20205), (111, 20244), (117, 20340),

Gene: MellowYellow_27 Start: 16974, Stop: 17912, Start Num: 24

Candidate Starts for MellowYellow_27:

(15, 16926), (Start: 24 @16974 has 8 MA's), (62, 17274), (75, 17379), (89, 17511), (95, 17547), (102, 17634), (111, 17715), (118, 17826), (123, 17868),

Gene: MrSmee_22 Start: 17092, Stop: 18069, Start Num: 17

Candidate Starts for MrSmee_22:

(6, 16855), (8, 16870), (11, 16990), (Start: 17 @17092 has 10 MA's), (29, 17155), (34, 17179), (36, 17191), (37, 17197), (41, 17251), (43, 17272), (44, 17287), (57, 17383), (77, 17539), (89, 17671), (99, 17749), (101, 17782), (103, 17803), (114, 17947),

Gene: Nandita_25 Start: 18629, Stop: 19573, Start Num: 26

Candidate Starts for Nandita_25:

(Start: 26 @18629 has 10 MA's), (27, 18638), (32, 18659), (38, 18704), (39, 18713), (51, 18845), (56, 18875), (61, 18914), (87, 19160), (89, 19178), (101, 19289), (114, 19454), (115, 19457),

Gene: Nostromo_28 Start: 23313, Stop: 24266, Start Num: 25

Candidate Starts for Nostromo_28:

(18, 23265), (Start: 25 @23313 has 2 MA's), (40, 23427), (53, 23541), (54, 23547), (59, 23586), (80, 23763), (89, 23865), (98, 23937), (108, 24051), (111, 24066), (116, 24156), (119, 24186),

Gene: NyleyClemson_26 Start: 16919, Stop: 17857, Start Num: 24

Candidate Starts for NyleyClemson_26:

(15, 16871), (Start: 24 @16919 has 8 MA's), (62, 17219), (75, 17324), (89, 17456), (95, 17492), (102, 17579), (111, 17660), (118, 17771), (123, 17813),

Gene: Persistence_26 Start: 19282, Stop: 20262, Start Num: 17

Candidate Starts for Persistence_26:

(Start: 17 @19282 has 10 MA's), (20, 19291), (34, 19369), (36, 19381), (57, 19573), (68, 19654), (77, 19729), (89, 19867), (99, 19945), (101, 19978), (102, 19987), (114, 20143), (115, 20146), (118, 20176),

Gene: Phrank15_26 Start: 19335, Stop: 20282, Start Num: 23

Candidate Starts for Phrank15_26:

(Start: 23 @19335 has 7 MA's), (39, 19422), (60, 19614), (64, 19650), (68, 19668), (75, 19740), (89, 19881), (95, 19917), (100, 19983), (101, 19995), (102, 20004), (105, 20046), (111, 20085), (117, 20181),

Gene: Pitbull_22 Start: 16646, Stop: 17593, Start Num: 24

Candidate Starts for Pitbull_22:

(Start: 19 @16619 has 1 MA's), (Start: 24 @16646 has 8 MA's), (39, 16730), (49, 16838), (60, 16925), (68, 16979), (75, 17051), (89, 17192), (94, 17216), (95, 17228), (100, 17294), (101, 17306), (123, 17549),

Gene: Popper_23 Start: 18534, Stop: 19478, Start Num: 26

Candidate Starts for Popper_23:

(13, 18450), (22, 18495), (Start: 26 @18534 has 10 MA's), (38, 18609), (39, 18618), (51, 18750), (56, 18780), (59, 18807), (87, 19065), (89, 19083), (101, 19194), (106, 19260), (108, 19269), (110, 19281), (112, 19314), (122, 19431),

Gene: Pucara_25 Start: 19341, Stop: 20285, Start Num: 26

Candidate Starts for Pucara_25:

(Start: 26 @19341 has 10 MA's), (27, 19350), (39, 19425), (51, 19557), (56, 19587), (59, 19614), (65, 19659), (89, 19890), (104, 20025), (108, 20076), (112, 20121),

Gene: Pureglobe5_32 Start: 18448, Stop: 19386, Start Num: 24

Candidate Starts for Pureglobe5_32:

(15, 18400), (Start: 24 @18448 has 8 MA's), (45, 18619), (62, 18748), (75, 18853), (89, 18985), (95, 19021), (102, 19108), (111, 19189), (118, 19300), (123, 19342),

Gene: QuinnAvery_25 Start: 18777, Stop: 19721, Start Num: 24

Candidate Starts for QuinnAvery_25:

(1, 18072), (2, 18099), (3, 18219), (Start: 19 @18744 has 1 MA's), (Start: 24 @18777 has 8 MA's), (48, 18966), (60, 19053), (64, 19089), (68, 19107), (75, 19179), (89, 19320), (95, 19356), (102, 19443), (105, 19485), (111, 19524), (121, 19662),

Gene: Ranunculus_24 Start: 17342, Stop: 18316, Start Num: 16

Candidate Starts for Ranunculus_24:

(Start: 16 @17342 has 1 MA's), (Start: 25 @17390 has 2 MA's), (28, 17405), (30, 17408), (42, 17519), (44, 17543), (71, 17762), (72, 17774), (74, 17792), (89, 17924), (106, 18101), (117, 18218),

Gene: Raphaella_27 Start: 19401, Stop: 20348, Start Num: 23

Candidate Starts for Raphaella_27:

(Start: 23 @19401 has 7 MA's), (39, 19488), (60, 19680), (64, 19716), (68, 19734), (75, 19806), (89, 19947), (95, 19983), (100, 20049), (101, 20061), (102, 20070), (105, 20112), (111, 20151), (117, 20247),

Gene: Raqqa_24 Start: 18653, Stop: 19639, Start Num: 17

Candidate Starts for Raqqa_24:

(7, 18428), (Start: 17 @18653 has 10 MA's), (Start: 25 @18701 has 2 MA's), (28, 18716), (30, 18719), (34, 18746), (72, 19085), (85, 19196), (89, 19238), (116, 19538), (120, 19574),

Gene: RazzB_25 Start: 16747, Stop: 17685, Start Num: 24

Candidate Starts for RazzB_25:

(15, 16699), (Start: 24 @16747 has 8 MA's), (45, 16918), (62, 17047), (75, 17152), (89, 17284), (95, 17320), (102, 17407), (111, 17488), (118, 17599), (123, 17641),

Gene: RootBeer_22 Start: 17010, Stop: 17987, Start Num: 17

Candidate Starts for RootBeer_22:

(4, 16677), (5, 16746), (7, 16785), (Start: 17 @17010 has 10 MA's), (Start: 25 @17055 has 2 MA's), (34, 17100), (89, 17592), (99, 17670), (107, 17772), (114, 17868), (117, 17886),

Gene: Ryan_25 Start: 19219, Stop: 20163, Start Num: 26

Candidate Starts for Ryan_25:

(Start: 26 @19219 has 10 MA's), (27, 19228), (38, 19294), (39, 19303), (40, 19333), (41, 19339), (51, 19435), (56, 19465), (59, 19492), (61, 19504), (65, 19537), (87, 19750), (89, 19768), (101, 19879), (114, 20044), (115, 20047),

Gene: Sakai_27 Start: 19410, Stop: 20357, Start Num: 23

Candidate Starts for Sakai_27:

(Start: 23 @19410 has 7 MA's), (39, 19497), (60, 19689), (64, 19725), (68, 19743), (75, 19815), (89, 19956), (95, 19992), (100, 20058), (101, 20070), (102, 20079), (105, 20121), (111, 20160), (117, 20256),

Gene: Schism_25 Start: 18629, Stop: 19573, Start Num: 26

Candidate Starts for Schism_25:

(Start: 26 @18629 has 10 MA's), (27, 18638), (32, 18659), (38, 18704), (39, 18713), (51, 18845), (56, 18875), (61, 18914), (87, 19160), (89, 19178), (101, 19289), (114, 19454), (115, 19457),

Gene: Seahorse_28 Start: 19765, Stop: 20751, Start Num: 17

Candidate Starts for Seahorse_28:

(Start: 17 @19765 has 10 MA's), (Start: 25 @19813 has 2 MA's), (30, 19831), (34, 19858), (36, 19870), (37, 19876), (72, 20197), (79, 20257), (85, 20308), (89, 20350), (116, 20650),

Gene: Shukran_27 Start: 19322, Stop: 20308, Start Num: 17

Candidate Starts for Shukran_27:

(Start: 17 @19322 has 10 MA's), (Start: 25 @19370 has 2 MA's), (30, 19388), (37, 19433), (41, 19487), (47, 19544), (64, 19676), (67, 19691), (77, 19784), (85, 19865), (89, 19907), (111, 20120), (116, 20207),

Gene: Sicarius2_29 Start: 24015, Stop: 24896, Start Num: 25

Candidate Starts for Sicarius2_29:

(Start: 25 @24015 has 2 MA's), (40, 24129), (46, 24189), (53, 24243), (54, 24249), (59, 24288), (89, 24549), (113, 24783),

Gene: Skitty_26 Start: 17092, Stop: 18069, Start Num: 17

Candidate Starts for Skitty_26:

(6, 16855), (8, 16870), (11, 16990), (Start: 17 @17092 has 10 MA's), (29, 17155), (34, 17179), (36, 17191), (37, 17197), (41, 17251), (43, 17272), (44, 17287), (57, 17383), (77, 17539), (89, 17671), (99, 17749), (101, 17782), (103, 17803), (114, 17947),

Gene: Tiff81_28 Start: 19493, Stop: 20479, Start Num: 17

Candidate Starts for Tiff81_28:

(Start: 17 @19493 has 10 MA's), (Start: 25 @19541 has 2 MA's), (28, 19556), (30, 19559), (34, 19586), (36, 19598), (37, 19604), (47, 19715), (72, 19925), (85, 20036), (89, 20078), (116, 20378),

Gene: TripleJ_24 Start: 18283, Stop: 19278, Start Num: 17

Candidate Starts for TripleJ_24:

(Start: 17 @18283 has 10 MA's), (36, 18391), (41, 18451), (50, 18532), (52, 18544), (63, 18631), (66, 18646), (72, 18709), (78, 18745), (89, 18883), (91, 18895), (103, 19015), (114, 19159), (115, 19162),

Gene: Vibaki_27 Start: 25425, Stop: 26384, Start Num: 26

Candidate Starts for Vibaki_27:

(14, 25350), (Start: 26 @25425 has 10 MA's), (27, 25434), (40, 25533), (55, 25656), (59, 25692), (68, 25749), (76, 25827), (89, 25986), (98, 26058), (108, 26172), (116, 26277),

Gene: Vitus_27 Start: 22213, Stop: 23169, Start Num: 25

Candidate Starts for Vitus_27:

(Start: 25 @22213 has 2 MA's), (40, 22327), (53, 22441), (54, 22447), (59, 22486), (68, 22543), (76, 22621), (80, 22663), (89, 22774), (97, 22843), (101, 22882), (108, 22957), (109, 22966), (116, 23062), (119, 23092),

Gene: Vopal_28 Start: 19473, Stop: 20420, Start Num: 23

Candidate Starts for Vopal_28:

(Start: 23 @19473 has 7 MA's), (39, 19560), (60, 19752), (64, 19788), (68, 19806), (75, 19878), (89, 20019), (95, 20055), (100, 20121), (101, 20133), (102, 20142), (105, 20184), (111, 20223), (117, 20319),

Gene: Zaheer_25 Start: 19308, Stop: 20252, Start Num: 26

Candidate Starts for Zaheer_25:

(Start: 26 @19308 has 10 MA's), (27, 19317), (38, 19383), (39, 19392), (40, 19422), (41, 19428), (51, 19524), (56, 19554), (59, 19581), (61, 19593), (65, 19626), (87, 19839), (89, 19857), (101, 19968), (114, 20133), (115, 20136),

Gene: Zucker_24 Start: 18385, Stop: 19371, Start Num: 17

Candidate Starts for Zucker_24:

(Start: 17 @18385 has 10 MA's), (Start: 25 @18433 has 2 MA's), (36, 18490), (37, 18496), (44, 18586), (47, 18607), (58, 18679), (64, 18739), (70, 18772), (85, 18928), (89, 18970), (116, 19270), (120, 19306),