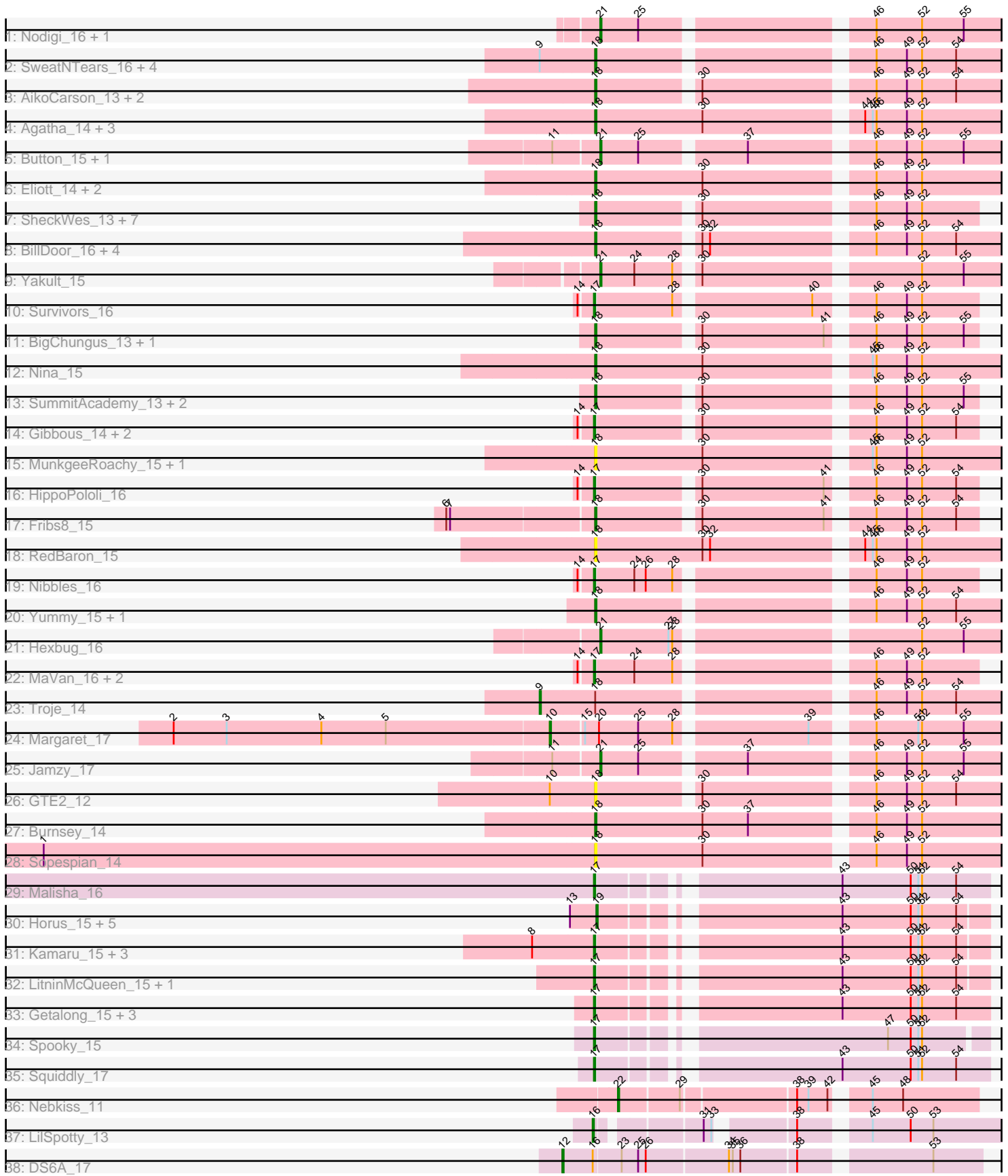


Pham 166645



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 166645 Report

This analysis was run 07/09/24 on database version 566.

Pham number 166645 has 83 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Nodigi_16, Orla_16
- Track 2 : SweatNTears_16, Biskit_15, Buttrmlkdreams_14, SketchMex_13, MScarn_16
- Track 3 : AikoCarson_13, Emalyn_13, Amok_13
- Track 4 : Agatha_14, Axym_14, Cozz_14, GoldHunter_15
- Track 5 : Button_15, GiKK_17
- Track 6 : Elliott_14, Quasar_15, PsychoKiller_14
- Track 7 : SheckWes_13, MAnor_14, CherryonLim_15, Mayweather_15, Elinal_15, Vine_15, KayGee_13, Pons_14
- Track 8 : BillDoor_16, Yarn_13, SteamedHams_16, Tolls_16, AndPeggy_13
- Track 9 : Yakult_15
- Track 10 : Survivors_16
- Track 11 : BigChungus_13, Feastonyeet_13
- Track 12 : Nina_15
- Track 13 : SummitAcademy_13, Lauer_13, PotPie_14
- Track 14 : Gibbous_14, Cleo_14, Dre3_14
- Track 15 : MunkgeeRoachy_15, Typhonomachy_15
- Track 16 : HippoPololi_16
- Track 17 : Fribs8_15
- Track 18 : RedBaron_15
- Track 19 : Nibbles_16
- Track 20 : Yummy_15, Horseradish_15
- Track 21 : Hexbug_16
- Track 22 : MaVan_16, Azira_16, Zareef_18
- Track 23 : Troje_14
- Track 24 : Margaret_17
- Track 25 : Jamzy_17
- Track 26 : GTE2_12
- Track 27 : Burnsey_14
- Track 28 : Sopespian_14
- Track 29 : Malisha_16
- Track 30 : Horus_15, Lutum_15, Frickyeah_15, Asapag_15, Leroy_15, BENtherdunthat_15
- Track 31 : Kamaru_15, Holliday_16, CheeseTouch_15, Budski_15
- Track 32 : LitninMcQueen_15, Phabuloso_15
- Track 33 : Getalong_15, Whitney_15, Phistory_15, Periwinkle_15
- Track 34 : Spooky_15

- Track 35 : Squiddly_17
- Track 36 : Nebkiss_11
- Track 37 : LilSpotty_13
- Track 38 : DS6A_17

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

The start number called the most often in the published annotations is 18, it was called in 33 of the 71 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha_14, AikoCarson_13, Amok_13, AndPeggy_13, Axym_14, BigChungus_13, BillDoor_16, Biskit_15, Burnsey_14, Buttrmlkdreams_14, CherryonLim_15, Cozz_14, Elinal_15, Elliott_14, Emalyn_13, Feastonyeet_13, Fribs8_15, GTE2_12, GoldHunter_15, Horseradish_15, KayGee_13, Lauer_13, MAnor_14, MScarn_16, Mayweather_15, MunkgeeRoachy_15, Nina_15, Pons_14, PotPie_14, PsychoKiller_14, Quasar_15, RedBaron_15, SheckWes_13, SketchMex_13, Sopespian_14, SteamedHams_16, SummitAcademy_13, SweatNTears_16, Tolls_16, Typhonomachy_15, Vine_15, Yarn_13, Yummy_15,

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

- Troje_14,

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

- Asapag_15, Azira_16, BENtherdunthat_15, Budski_15, Button_15, CheeseTouch_15, Cleo_14, DS6A_17, Dre3_14, Frickyeah_15, Getalong_15, GiKK_17, Gibbous_14, Hexbug_16, HippoPololi_16, Holliday_16, Horus_15, Jamzy_17, Kamaru_15, Leroy_15, LilSpotty_13, LitninMcQueen_15, Lutum_15, MaVan_16, Malisha_16, Margaret_17, Nebkiss_11, Nibbles_16, Nodigi_16, Orla_16, Periwinkle_15, Phabuloso_15, Phistory_15, Spooky_15, Squiddly_17, Survivors_16, Whitney_15, Yakult_15, Zareef_18,

Summary by start number:

Start 9:

- Found in 6 of 83 (7.2%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Troje_14 (CT),

Start 10:

- Found in 2 of 83 (2.4%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Margaret_17 (CT),

Start 12:

- Found in 1 of 83 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present

- Phage (with cluster) where this start called: DS6A_17 (singleton),

Start 16:

- Found in 2 of 83 (2.4%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 50.0% of time when present
- Phage (with cluster) where this start called: LilSpotty_13 (singleton),

Start 17:

- Found in 22 of 83 (26.5%) of genes in pham
- Manual Annotations of this start: 21 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azira_16 (CT), Budski_15 (DN), CheeseTouch_15 (DN1), Cleo_14 (CT), Dre3_14 (CT), Getalong_15 (DN1), Gibbous_14 (CT), HippoPololi_16 (CT), Holliday_16 (DN1), Kamaru_15 (DN1), LitninMcQueen_15 (DN1), MaVan_16 (CT), Malisha_16 (DN), Nibbles_16 (CT), Periwinkle_15 (DN1), Phabuloso_15 (DN1), Phistory_15 (DN1), Spooky_15 (DN2), Squiddly_17 (DN2), Survivors_16 (CT), Whitney_15 (DN1), Zareef_18 (CT),

Start 18:

- Found in 44 of 83 (53.0%) of genes in pham
- Manual Annotations of this start: 33 of 71
- Called 97.7% of time when present
- Phage (with cluster) where this start called: Agatha_14 (CT), AikoCarson_13 (CT), Amok_13 (CT), AndPeggy_13 (CT), Axym_14 (CT), BigChungus_13 (CT), BillDoor_16 (CT), Biskit_15 (CT), Burnsey_14 (CT), Buttrmlkdreams_14 (CT), CherryonLim_15 (CT), Cozz_14 (CT), Elinal_15 (CT), Elliott_14 (CT), Emalyn_13 (CT), Feastonyeet_13 (CT), Fribs8_15 (CT), GTE2_12 (CT), GoldHunter_15 (CT), Horseradish_15 (CT), KayGee_13 (CT), Lauer_13 (CT), MAnor_14 (CT), MScarn_16 (CT), Mayweather_15 (CT), MunkgeeRoachy_15 (CT), Nina_15 (CT), Pons_14 (CT), PotPie_14 (CT), PsychoKiller_14 (CT), Quasar_15 (CT), RedBaron_15 (CT), SheckWes_13 (CT), SketchMex_13 (CT), Sopespian_14 (CT), SteamedHams_16 (CT), SummitAcademy_13 (CT), SweatNTears_16 (CT), Tolls_16 (CT), Typhonomachy_15 (CT), Vine_15 (CT), Yarn_13 (CT), Yummy_15 (CT),

Start 19:

- Found in 6 of 83 (7.2%) of genes in pham
- Manual Annotations of this start: 5 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Asapag_15 (DN1), BENtherdunthat_15 (DN1), Frickyeah_15 (DN1), Horus_15 (DN1), Leroy_15 (DN1), Lutum_15 (DN1),

Start 21:

- Found in 7 of 83 (8.4%) of genes in pham
- Manual Annotations of this start: 7 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Button_15 (CT), GiKK_17 (CT), Hexbug_16 (CT), Jamzy_17 (CT), Nodigi_16 (CT), Orla_16 (CT), Yakult_15 (CT),

Start 22:

- Found in 1 of 83 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Nebkiss_11 (X),

Summary by clusters:

There are 6 clusters represented in this pham: DN, singleton, DN1, DN2, X, CT,

Info for manual annotations of cluster CT:

- Start number 9 was manually annotated 1 time for cluster CT.
- Start number 10 was manually annotated 1 time for cluster CT.
- Start number 17 was manually annotated 8 times for cluster CT.
- Start number 18 was manually annotated 33 times for cluster CT.
- Start number 21 was manually annotated 7 times for cluster CT.

Info for manual annotations of cluster DN:

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

Info for manual annotations of cluster DN1:

- Start number 17 was manually annotated 9 times for cluster DN1.
- Start number 19 was manually annotated 5 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 17 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster X:

- Start number 22 was manually annotated 1 time for cluster X.

Gene Information:

Gene: Agatha_14 Start: 8885, Stop: 9190, Start Num: 18

Candidate Starts for Agatha_14:

(Start: 18 @8885 has 33 MA's), (30, 8969), (44, 9083), (45, 9089), (46, 9092), (49, 9116), (52, 9128),

Gene: AikoCarson_13 Start: 8613, Stop: 8906, Start Num: 18

Candidate Starts for AikoCarson_13:

(Start: 18 @8613 has 33 MA's), (30, 8685), (46, 8808), (49, 8832), (52, 8844), (54, 8871),

Gene: Amok_13 Start: 8613, Stop: 8906, Start Num: 18

Candidate Starts for Amok_13:

(Start: 18 @8613 has 33 MA's), (30, 8685), (46, 8808), (49, 8832), (52, 8844), (54, 8871),

Gene: AndPeggy_13 Start: 8901, Stop: 9194, Start Num: 18

Candidate Starts for AndPeggy_13:

(Start: 18 @8901 has 33 MA's), (30, 8973), (32, 8979), (46, 9096), (49, 9120), (52, 9132), (54, 9159),

Gene: Asapag_15 Start: 8335, Stop: 8613, Start Num: 19

Candidate Starts for Asapag_15:

(13, 8314), (Start: 19 @8335 has 5 MA's), (43, 8500), (50, 8554), (51, 8560), (52, 8563), (54, 8590),

Gene: Axym_14 Start: 8885, Stop: 9190, Start Num: 18

Candidate Starts for Axym_14:

(Start: 18 @8885 has 33 MA's), (30, 8969), (44, 9083), (45, 9089), (46, 9092), (49, 9116), (52, 9128),

Gene: Azira_16 Start: 9884, Stop: 10159, Start Num: 17

Candidate Starts for Azira_16:

(14, 9875), (Start: 17 @9884 has 21 MA's), (24, 9914), (28, 9944), (46, 10079), (49, 10103), (52, 10115),

Gene: BENtherdunthat_15 Start: 8335, Stop: 8613, Start Num: 19

Candidate Starts for BENtherdunthat_15:

(13, 8314), (Start: 19 @8335 has 5 MA's), (43, 8500), (50, 8554), (51, 8560), (52, 8563), (54, 8590),

Gene: BigChungus_13 Start: 8662, Stop: 8937, Start Num: 18

Candidate Starts for BigChungus_13:

(Start: 18 @8662 has 33 MA's), (30, 8734), (41, 8830), (46, 8857), (49, 8881), (52, 8893), (55, 8926),

Gene: BillDoor_16 Start: 8866, Stop: 9159, Start Num: 18

Candidate Starts for BillDoor_16:

(Start: 18 @8866 has 33 MA's), (30, 8938), (32, 8944), (46, 9061), (49, 9085), (52, 9097), (54, 9124),

Gene: Biskit_15 Start: 8872, Stop: 9165, Start Num: 18

Candidate Starts for Biskit_15:

(Start: 9 @8830 has 1 MA's), (Start: 18 @8872 has 33 MA's), (46, 9067), (49, 9091), (52, 9103), (54, 9130),

Gene: Budski_15 Start: 8319, Stop: 8597, Start Num: 17

Candidate Starts for Budski_15:

(8, 8271), (Start: 17 @8319 has 21 MA's), (43, 8484), (50, 8538), (51, 8544), (52, 8547), (54, 8574),

Gene: Burnsey_14 Start: 8886, Stop: 9191, Start Num: 18

Candidate Starts for Burnsey_14:

(Start: 18 @8886 has 33 MA's), (30, 8970), (37, 9006), (46, 9093), (49, 9117), (52, 9129),

Gene: Button_15 Start: 8897, Stop: 9190, Start Num: 21

Candidate Starts for Button_15:

(11, 8864), (Start: 21 @8897 has 7 MA's), (25, 8927), (37, 9002), (46, 9089), (49, 9113), (52, 9125), (55, 9158),

Gene: Buttrmlkdreams_14 Start: 8857, Stop: 9150, Start Num: 18

Candidate Starts for Buttrmlkdreams_14:

(Start: 9 @8815 has 1 MA's), (Start: 18 @8857 has 33 MA's), (46, 9052), (49, 9076), (52, 9088), (54, 9115),

Gene: CheeseTouch_15 Start: 8319, Stop: 8597, Start Num: 17

Candidate Starts for CheeseTouch_15:

(8, 8271), (Start: 17 @8319 has 21 MA's), (43, 8484), (50, 8538), (51, 8544), (52, 8547), (54, 8574),

Gene: CherryonLim_15 Start: 9392, Stop: 9667, Start Num: 18

Candidate Starts for CherryonLim_15:

(Start: 18 @9392 has 33 MA's), (30, 9464), (46, 9587), (49, 9611), (52, 9623),

Gene: Cleo_14 Start: 9174, Stop: 9449, Start Num: 17

Candidate Starts for Cleo_14:

(14, 9165), (Start: 17 @9174 has 21 MA's), (30, 9246), (46, 9369), (49, 9393), (52, 9405), (54, 9432),

Gene: Cozz_14 Start: 8886, Stop: 9191, Start Num: 18
Candidate Starts for Cozz_14:
(Start: 18 @8886 has 33 MA's), (30, 8970), (44, 9084), (45, 9090), (46, 9093), (49, 9117), (52, 9129),

Gene: DS6A_17 Start: 11578, Stop: 11886, Start Num: 12
Candidate Starts for DS6A_17:
(Start: 12 @11578 has 1 MA's), (Start: 16 @11602 has 1 MA's), (23, 11623), (25, 11635), (26, 11641),
(34, 11704), (35, 11707), (36, 11713), (38, 11755), (53, 11848),

Gene: Dre3_14 Start: 9121, Stop: 9396, Start Num: 17
Candidate Starts for Dre3_14:
(14, 9112), (Start: 17 @9121 has 21 MA's), (30, 9193), (46, 9316), (49, 9340), (52, 9352), (54, 9379),

Gene: Elinal_15 Start: 8643, Stop: 8918, Start Num: 18
Candidate Starts for Elinal_15:
(Start: 18 @8643 has 33 MA's), (30, 8715), (46, 8838), (49, 8862), (52, 8874),

Gene: Elliott_14 Start: 8885, Stop: 9190, Start Num: 18
Candidate Starts for Elliott_14:
(Start: 18 @8885 has 33 MA's), (30, 8969), (46, 9092), (49, 9116), (52, 9128),

Gene: Emalyn_13 Start: 8612, Stop: 8905, Start Num: 18
Candidate Starts for Emalyn_13:
(Start: 18 @8612 has 33 MA's), (30, 8684), (46, 8807), (49, 8831), (52, 8843), (54, 8870),

Gene: Feastonyeet_13 Start: 8662, Stop: 8937, Start Num: 18
Candidate Starts for Feastonyeet_13:
(Start: 18 @8662 has 33 MA's), (30, 8734), (41, 8830), (46, 8857), (49, 8881), (52, 8893), (55, 8926),

Gene: Fribs8_15 Start: 9689, Stop: 9964, Start Num: 18
Candidate Starts for Fribs8_15:
(6, 9578), (7, 9581), (Start: 18 @9689 has 33 MA's), (30, 9761), (41, 9857), (46, 9884), (49, 9908), (52, 9920), (54, 9947),

Gene: Frickyeah_15 Start: 8335, Stop: 8613, Start Num: 19
Candidate Starts for Frickyeah_15:
(13, 8314), (Start: 19 @8335 has 5 MA's), (43, 8500), (50, 8554), (51, 8560), (52, 8563), (54, 8590),

Gene: GTE2_12 Start: 8563, Stop: 8856, Start Num: 18
Candidate Starts for GTE2_12:
(Start: 10 @8527 has 1 MA's), (Start: 18 @8563 has 33 MA's), (30, 8635), (46, 8758), (49, 8782), (52, 8794), (54, 8821),

Gene: Getalong_15 Start: 8315, Stop: 8596, Start Num: 17
Candidate Starts for Getalong_15:
(Start: 17 @8315 has 21 MA's), (43, 8480), (50, 8534), (51, 8540), (52, 8543), (54, 8570),

Gene: GiKK_17 Start: 9200, Stop: 9493, Start Num: 21
Candidate Starts for GiKK_17:
(11, 9167), (Start: 21 @9200 has 7 MA's), (25, 9230), (37, 9305), (46, 9392), (49, 9416), (52, 9428),
(55, 9461),

Gene: Gibbous_14 Start: 9121, Stop: 9396, Start Num: 17

Candidate Starts for Gibbous_14:

(14, 9112), (Start: 17 @9121 has 21 MA's), (30, 9193), (46, 9316), (49, 9340), (52, 9352), (54, 9379),

Gene: GoldHunter_15 Start: 8886, Stop: 9191, Start Num: 18

Candidate Starts for GoldHunter_15:

(Start: 18 @8886 has 33 MA's), (30, 8970), (44, 9084), (45, 9090), (46, 9093), (49, 9117), (52, 9129),

Gene: Hexbug_16 Start: 9883, Stop: 10176, Start Num: 21

Candidate Starts for Hexbug_16:

(Start: 21 @9883 has 7 MA's), (27, 9937), (28, 9940), (52, 10111), (55, 10144),

Gene: HippoPololi_16 Start: 9778, Stop: 10053, Start Num: 17

Candidate Starts for HippoPololi_16:

(14, 9769), (Start: 17 @9778 has 21 MA's), (30, 9850), (41, 9946), (46, 9973), (49, 9997), (52, 10009), (54, 10036),

Gene: Holliday_16 Start: 8319, Stop: 8597, Start Num: 17

Candidate Starts for Holliday_16:

(8, 8271), (Start: 17 @8319 has 21 MA's), (43, 8484), (50, 8538), (51, 8544), (52, 8547), (54, 8574),

Gene: Horseradish_15 Start: 8771, Stop: 9064, Start Num: 18

Candidate Starts for Horseradish_15:

(Start: 18 @8771 has 33 MA's), (46, 8966), (49, 8990), (52, 9002), (54, 9029),

Gene: Horus_15 Start: 8335, Stop: 8613, Start Num: 19

Candidate Starts for Horus_15:

(13, 8314), (Start: 19 @8335 has 5 MA's), (43, 8500), (50, 8554), (51, 8560), (52, 8563), (54, 8590),

Gene: Jamzy_17 Start: 9210, Stop: 9503, Start Num: 21

Candidate Starts for Jamzy_17:

(11, 9177), (Start: 21 @9210 has 7 MA's), (25, 9240), (37, 9315), (46, 9402), (49, 9426), (52, 9438), (55, 9471),

Gene: Kamaru_15 Start: 8319, Stop: 8597, Start Num: 17

Candidate Starts for Kamaru_15:

(8, 8271), (Start: 17 @8319 has 21 MA's), (43, 8484), (50, 8538), (51, 8544), (52, 8547), (54, 8574),

Gene: KayGee_13 Start: 8643, Stop: 8918, Start Num: 18

Candidate Starts for KayGee_13:

(Start: 18 @8643 has 33 MA's), (30, 8715), (46, 8838), (49, 8862), (52, 8874),

Gene: Lauer_13 Start: 8692, Stop: 8967, Start Num: 18

Candidate Starts for Lauer_13:

(Start: 18 @8692 has 33 MA's), (30, 8764), (46, 8887), (49, 8911), (52, 8923), (55, 8956),

Gene: Leroy_15 Start: 8336, Stop: 8614, Start Num: 19

Candidate Starts for Leroy_15:

(13, 8315), (Start: 19 @8336 has 5 MA's), (43, 8501), (50, 8555), (51, 8561), (52, 8564), (54, 8591),

Gene: LilSpotty_13 Start: 8433, Stop: 8762, Start Num: 16

Candidate Starts for LilSpotty_13:

(Start: 16 @8433 has 1 MA's), (31, 8502), (33, 8508), (38, 8559), (45, 8604), (50, 8634), (53, 8652),

Gene: LitninMcQueen_15 Start: 8320, Stop: 8598, Start Num: 17
Candidate Starts for LitninMcQueen_15:
(Start: 17 @8320 has 21 MA's), (43, 8485), (50, 8539), (51, 8545), (52, 8548), (54, 8575),

Gene: Lutum_15 Start: 8335, Stop: 8613, Start Num: 19
Candidate Starts for Lutum_15:
(13, 8314), (Start: 19 @8335 has 5 MA's), (43, 8500), (50, 8554), (51, 8560), (52, 8563), (54, 8590),

Gene: MAnor_14 Start: 8635, Stop: 8910, Start Num: 18
Candidate Starts for MAnor_14:
(Start: 18 @8635 has 33 MA's), (30, 8707), (46, 8830), (49, 8854), (52, 8866),

Gene: MScarn_16 Start: 8857, Stop: 9150, Start Num: 18
Candidate Starts for MScarn_16:
(Start: 9 @8815 has 1 MA's), (Start: 18 @8857 has 33 MA's), (46, 9052), (49, 9076), (52, 9088), (54, 9115),

Gene: MaVan_16 Start: 9884, Stop: 10159, Start Num: 17
Candidate Starts for MaVan_16:
(14, 9875), (Start: 17 @9884 has 21 MA's), (24, 9914), (28, 9944), (46, 10079), (49, 10103), (52, 10115),

Gene: Malisha_16 Start: 10116, Stop: 10397, Start Num: 17
Candidate Starts for Malisha_16:
(Start: 17 @10116 has 21 MA's), (43, 10281), (50, 10335), (51, 10341), (52, 10344), (54, 10371),

Gene: Margaret_17 Start: 9558, Stop: 9884, Start Num: 10
Candidate Starts for Margaret_17:
(2, 9264), (3, 9306), (4, 9381), (5, 9432), (Start: 10 @9558 has 1 MA's), (15, 9582), (20, 9591), (25, 9621), (28, 9648), (39, 9744), (46, 9783), (51, 9816), (52, 9819), (55, 9852),

Gene: Mayweather_15 Start: 9265, Stop: 9540, Start Num: 18
Candidate Starts for Mayweather_15:
(Start: 18 @9265 has 33 MA's), (30, 9337), (46, 9460), (49, 9484), (52, 9496),

Gene: MunkgeeRoachy_15 Start: 8933, Stop: 9238, Start Num: 18
Candidate Starts for MunkgeeRoachy_15:
(Start: 18 @8933 has 33 MA's), (30, 9017), (45, 9137), (46, 9140), (49, 9164), (52, 9176),

Gene: Nebkiss_11 Start: 8761, Stop: 9018, Start Num: 22
Candidate Starts for Nebkiss_11:
(Start: 22 @8761 has 1 MA's), (29, 8806), (38, 8890), (39, 8899), (42, 8914), (45, 8935), (48, 8959),

Gene: Nibbles_16 Start: 9884, Stop: 10159, Start Num: 17
Candidate Starts for Nibbles_16:
(14, 9875), (Start: 17 @9884 has 21 MA's), (24, 9914), (26, 9923), (28, 9944), (46, 10079), (49, 10103), (52, 10115),

Gene: Nina_15 Start: 9918, Stop: 10223, Start Num: 18
Candidate Starts for Nina_15:
(Start: 18 @9918 has 33 MA's), (30, 10002), (45, 10122), (46, 10125), (49, 10149), (52, 10161),

Gene: Nodigi_16 Start: 9874, Stop: 10167, Start Num: 21

Candidate Starts for Nodigi_16:

(Start: 21 @9874 has 7 MA's), (25, 9904), (46, 10066), (52, 10102), (55, 10135),

Gene: Orla_16 Start: 9878, Stop: 10171, Start Num: 21

Candidate Starts for Orla_16:

(Start: 21 @9878 has 7 MA's), (25, 9908), (46, 10070), (52, 10106), (55, 10139),

Gene: Periwinkle_15 Start: 8315, Stop: 8593, Start Num: 17

Candidate Starts for Periwinkle_15:

(Start: 17 @8315 has 21 MA's), (43, 8480), (50, 8534), (51, 8540), (52, 8543), (54, 8570),

Gene: Phabuloso_15 Start: 8320, Stop: 8598, Start Num: 17

Candidate Starts for Phabuloso_15:

(Start: 17 @8320 has 21 MA's), (43, 8485), (50, 8539), (51, 8545), (52, 8548), (54, 8575),

Gene: Phistory_15 Start: 8304, Stop: 8582, Start Num: 17

Candidate Starts for Phistory_15:

(Start: 17 @8304 has 21 MA's), (43, 8469), (50, 8523), (51, 8529), (52, 8532), (54, 8559),

Gene: Pons_14 Start: 8643, Stop: 8918, Start Num: 18

Candidate Starts for Pons_14:

(Start: 18 @8643 has 33 MA's), (30, 8715), (46, 8838), (49, 8862), (52, 8874),

Gene: PotPie_14 Start: 9496, Stop: 9771, Start Num: 18

Candidate Starts for PotPie_14:

(Start: 18 @9496 has 33 MA's), (30, 9568), (46, 9691), (49, 9715), (52, 9727), (55, 9760),

Gene: PsychoKiller_14 Start: 8885, Stop: 9190, Start Num: 18

Candidate Starts for PsychoKiller_14:

(Start: 18 @8885 has 33 MA's), (30, 8969), (46, 9092), (49, 9116), (52, 9128),

Gene: Quasar_15 Start: 9494, Stop: 9799, Start Num: 18

Candidate Starts for Quasar_15:

(Start: 18 @9494 has 33 MA's), (30, 9578), (46, 9701), (49, 9725), (52, 9737),

Gene: RedBaron_15 Start: 8929, Stop: 9234, Start Num: 18

Candidate Starts for RedBaron_15:

(Start: 18 @8929 has 33 MA's), (30, 9013), (32, 9019), (44, 9127), (45, 9133), (46, 9136), (49, 9160), (52, 9172),

Gene: SheckWes_13 Start: 8631, Stop: 8906, Start Num: 18

Candidate Starts for SheckWes_13:

(Start: 18 @8631 has 33 MA's), (30, 8703), (46, 8826), (49, 8850), (52, 8862),

Gene: SketchMex_13 Start: 8872, Stop: 9165, Start Num: 18

Candidate Starts for SketchMex_13:

(Start: 9 @8830 has 1 MA's), (Start: 18 @8872 has 33 MA's), (46, 9067), (49, 9091), (52, 9103), (54, 9130),

Gene: Sopespian_14 Start: 8886, Stop: 9191, Start Num: 18

Candidate Starts for Sopespian_14:

(1, 8451), (Start: 18 @8886 has 33 MA's), (30, 8970), (46, 9093), (49, 9117), (52, 9129),

Gene: Spooky_15 Start: 8326, Stop: 8601, Start Num: 17
Candidate Starts for Spooky_15:
(Start: 17 @8326 has 21 MA's), (47, 8527), (50, 8545), (51, 8551), (52, 8554),

Gene: Squiddly_17 Start: 9737, Stop: 10018, Start Num: 17
Candidate Starts for Squiddly_17:
(Start: 17 @9737 has 21 MA's), (43, 9902), (50, 9956), (51, 9962), (52, 9965), (54, 9992),

Gene: SteamedHams_16 Start: 8902, Stop: 9195, Start Num: 18
Candidate Starts for SteamedHams_16:
(Start: 18 @8902 has 33 MA's), (30, 8974), (32, 8980), (46, 9097), (49, 9121), (52, 9133), (54, 9160),

Gene: SummitAcademy_13 Start: 8711, Stop: 8986, Start Num: 18
Candidate Starts for SummitAcademy_13:
(Start: 18 @8711 has 33 MA's), (30, 8783), (46, 8906), (49, 8930), (52, 8942), (55, 8975),

Gene: Survivors_16 Start: 9739, Stop: 10014, Start Num: 17
Candidate Starts for Survivors_16:
(14, 9730), (Start: 17 @9739 has 21 MA's), (28, 9799), (40, 9898), (46, 9934), (49, 9958), (52, 9970),

Gene: SweatNTears_16 Start: 9383, Stop: 9676, Start Num: 18
Candidate Starts for SweatNTears_16:
(Start: 9 @9341 has 1 MA's), (Start: 18 @9383 has 33 MA's), (46, 9578), (49, 9602), (52, 9614), (54, 9641),

Gene: Tolls_16 Start: 8905, Stop: 9198, Start Num: 18
Candidate Starts for Tolls_16:
(Start: 18 @8905 has 33 MA's), (30, 8977), (32, 8983), (46, 9100), (49, 9124), (52, 9136), (54, 9163),

Gene: Troje_14 Start: 8815, Stop: 9150, Start Num: 9
Candidate Starts for Troje_14:
(Start: 9 @8815 has 1 MA's), (Start: 18 @8857 has 33 MA's), (46, 9052), (49, 9076), (52, 9088), (54, 9115),

Gene: Typhonomachy_15 Start: 8885, Stop: 9190, Start Num: 18
Candidate Starts for Typhonomachy_15:
(Start: 18 @8885 has 33 MA's), (30, 8969), (45, 9089), (46, 9092), (49, 9116), (52, 9128),

Gene: Vine_15 Start: 9640, Stop: 9915, Start Num: 18
Candidate Starts for Vine_15:
(Start: 18 @9640 has 33 MA's), (30, 9712), (46, 9835), (49, 9859), (52, 9871),

Gene: Whitney_15 Start: 8315, Stop: 8596, Start Num: 17
Candidate Starts for Whitney_15:
(Start: 17 @8315 has 21 MA's), (43, 8480), (50, 8534), (51, 8540), (52, 8543), (54, 8570),

Gene: Yakult_15 Start: 8776, Stop: 9066, Start Num: 21
Candidate Starts for Yakult_15:
(Start: 21 @8776 has 7 MA's), (24, 8803), (28, 8833), (30, 8845), (52, 9004), (55, 9037),

Gene: Yarn_13 Start: 8895, Stop: 9188, Start Num: 18
Candidate Starts for Yarn_13:
(Start: 18 @8895 has 33 MA's), (30, 8967), (32, 8973), (46, 9090), (49, 9114), (52, 9126), (54, 9153),

Gene: Yummy_15 Start: 8771, Stop: 9064, Start Num: 18

Candidate Starts for Yummy_15:

(Start: 18 @8771 has 33 MA's), (46, 8966), (49, 8990), (52, 9002), (54, 9029),

Gene: Zareef_18 Start: 9885, Stop: 10160, Start Num: 17

Candidate Starts for Zareef_18:

(14, 9876), (Start: 17 @9885 has 21 MA's), (24, 9915), (28, 9945), (46, 10080), (49, 10104), (52, 10116),