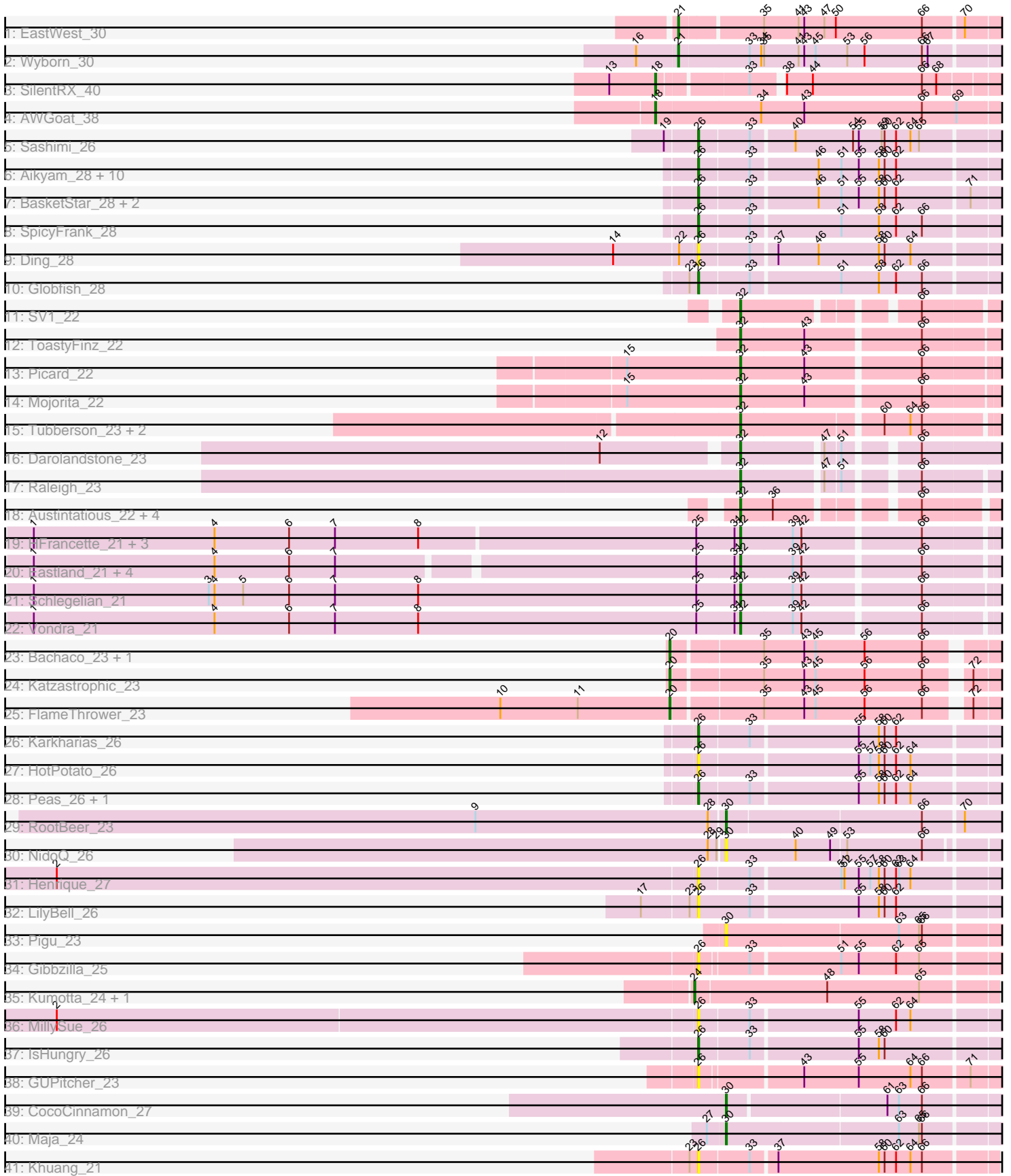


Pham 294702



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 294702 Report

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

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 294702 has 69 members, 14 are drafts.

Phages represented in each track:

- Track 1 : EastWest\_30
- Track 2 : Wyborn\_30
- Track 3 : SilentRX\_40
- Track 4 : AWGoat\_38
- Track 5 : Sashimi\_26
- Track 6 : Aikyam\_28, CookieBear\_28, YoungHarleezy\_28, RadFad\_28, Richie\_28, BenchScraper\_28, Hillester\_28, MidnightRain\_28, Auxilium\_28, MaterMagnus\_28, Lasker\_28
- Track 7 : BasketStar\_28, BlueShadow\_28, Windest\_29
- Track 8 : SpicyFrank\_28
- Track 9 : Ding\_28
- Track 10 : Globfish\_28
- Track 11 : SV1\_22
- Track 12 : ToastyFinz\_22
- Track 13 : Picard\_22
- Track 14 : Mojorita\_22
- Track 15 : Tubberson\_23, SoJo\_23, DaRealMyers\_23
- Track 16 : Darolandstone\_23
- Track 17 : Raleigh\_23
- Track 18 : Austintatious\_22, Bioscum\_22, PapayaSalad\_22, Lishka\_22, Ididsumtinwong\_22
- Track 19 : HFrancette\_21, Cumberbatch\_21, ArizonaGT\_21, Ignacio\_21
- Track 20 : Eastland\_21, AxeJC\_21, Eklok\_21, Piccadilly\_21, FrumpyGal\_21
- Track 21 : Schlegelian\_21
- Track 22 : Vondra\_21
- Track 23 : Bachaco\_23, Celaena\_23
- Track 24 : Katzastrophic\_23
- Track 25 : FlameThrower\_23
- Track 26 : Karkharias\_26
- Track 27 : HotPotato\_26
- Track 28 : Peas\_26, Eileen\_26
- Track 29 : RootBeer\_23
- Track 30 : NidoQ\_26

- Track 31 : Henrique\_27
- Track 32 : LilyBell\_26
- Track 33 : Pigu\_23
- Track 34 : Gibbzilla\_25
- Track 35 : Kumotta\_24, MargaretKali\_24
- Track 36 : MillySue\_26
- Track 37 : IsHungry\_26
- Track 38 : GUPitcher\_23
- Track 39 : CocoCinnamon\_27
- Track 40 : Maja\_24
- Track 41 : Khuang\_21

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

The start number called the most often in the published annotations is 32, it was called in 24 of the 55 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ArizonaGT\_21, Austintatious\_22, AxeJC\_21, Bioscum\_22, Cumberbatch\_21, DaRealMyers\_23, Darolandstone\_23, Eastland\_21, Eklok\_21, FrumpyGal\_21, HFrancette\_21, Ididsumtinwong\_22, Ignacio\_21, Lishka\_22, Mojorita\_22, PapayaSalad\_22, Picard\_22, Piccadilly\_21, Raleigh\_23, SV1\_22, Schlegelian\_21, SoJo\_23, ToastyFinz\_22, Tubberson\_23, Vondra\_21,

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

- 

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

- AWGoat\_38, Aikyam\_28, Auxilium\_28, Bachaco\_23, BasketStar\_28, BenchScraper\_28, BlueShadow\_28, Celaena\_23, CocoCinnamon\_27, CookieBear\_28, Ding\_28, EastWest\_30, Eileen\_26, FlameThrower\_23, GUPitcher\_23, Gibbzilla\_25, Globfish\_28, Henrique\_27, Hillester\_28, HotPotato\_26, IsHungry\_26, Karkharias\_26, Katzastrophic\_23, Khuang\_21, Kumotta\_24, Lasker\_28, LilyBell\_26, Maja\_24, MargaretKali\_24, MaterMagnus\_28, MidnightRain\_28, MillySue\_26, NidoQ\_26, Peas\_26, Pigu\_23, RadFad\_28, Richie\_28, RootBeer\_23, Sashimi\_26, SilentRX\_40, SpicyFrank\_28, Windest\_29, Wyborn\_30, YoungHarleezy\_28,

**Summary by start number:**

Start 18:

- Found in 2 of 69 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AWGoat\_38 (AP4), SilentRX\_40 (AP4),

Start 20:

- Found in 4 of 69 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 4 of 55
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Bachaco\_23 (EB), Celaena\_23 (EB), FlameThrower\_23 (EB), Katzastrophic\_23 (EB),

#### Start 21:

- Found in 2 of 69 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EastWest\_30 (AO), Wyborn\_30 (AO2),

#### Start 24:

- Found in 2 of 69 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumotta\_24 (FB), MargaretKali\_24 (FB),

#### Start 26:

- Found in 29 of 69 ( 42.0% ) of genes in pham
- Manual Annotations of this start: 18 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aikyam\_28 (AY), Auxilium\_28 (AY), BasketStar\_28 (AY), BenchScraper\_28 (AY), BlueShadow\_28 (AY), CookieBear\_28 (AY), Ding\_28 (AY), Eileen\_26 (FA), GUPitcher\_23 (FJ), Gibbzilla\_25 (FB), Globfish\_28 (AY), Henrique\_27 (FA), Hillester\_28 (AY), HotPotato\_26 (FA), IsHungry\_26 (FF), Karkharias\_26 (FA), Khuang\_21 (FS), Lasker\_28 (AY), LilyBell\_26 (FA), MaterMagnus\_28 (AY), MidnightRain\_28 (AY), MillySue\_26 (FF), Peas\_26 (FA), RadFad\_28 (AY), Richie\_28 (AY), Sashimi\_26 (AY), SpicyFrank\_28 (AY), Windest\_29 (AY), YoungHarleezy\_28 (AY),

#### Start 30:

- Found in 5 of 69 ( 7.2% ) of genes in pham
- Manual Annotations of this start: 3 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CocoCinnamon\_27 (FO), Maja\_24 (FO), NidoQ\_26 (FA), Pigu\_23 (FB), RootBeer\_23 (FA),

#### Start 32:

- Found in 25 of 69 ( 36.2% ) of genes in pham
- Manual Annotations of this start: 24 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArizonaGT\_21 (BP), Austintatious\_22 (BC3), AxeJC\_21 (BP), Bioscum\_22 (BC3), Cumberbatch\_21 (BP), DaRealMyers\_23 (BC1), Darolandstone\_23 (BC2), Eastland\_21 (BP), Eklok\_21 (BP), FrumpyGal\_21 (BP), HFrancette\_21 (BP), Ididsumtinwong\_22 (BC3), Ignacio\_21 (BP), Lishka\_22 (BC3), Mojobrita\_22 (BC1), PapayaSalad\_22 (BC3), Picard\_22 (BC1), Piccadilly\_21 (BP), Raleigh\_23 (BC2), SV1\_22 (BC1), Schlegelian\_21 (BP), SoJo\_23 (BC1), ToastyFinz\_22 (BC1), Tubberson\_23 (BC1), Vondra\_21 (BP),

### Summary by clusters:

There are 15 clusters represented in this pham: FS, AO, AP4, EB, FA, FB, BP, AO2, FF, AY, FJ, BC3, BC1, BC2, FO,

Info for manual annotations of cluster AO:

- Start number 21 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO2:

- Start number 21 was manually annotated 1 time for cluster AO2.

Info for manual annotations of cluster AP4:

- Start number 18 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster AY:

- Start number 26 was manually annotated 14 times for cluster AY.

Info for manual annotations of cluster BC1:

- Start number 32 was manually annotated 6 times for cluster BC1.

Info for manual annotations of cluster BC2:

- Start number 32 was manually annotated 2 times for cluster BC2.

Info for manual annotations of cluster BC3:

- Start number 32 was manually annotated 5 times for cluster BC3.

Info for manual annotations of cluster BP:

- Start number 32 was manually annotated 11 times for cluster BP.

Info for manual annotations of cluster EB:

- Start number 20 was manually annotated 4 times for cluster EB.

Info for manual annotations of cluster FA:

- Start number 26 was manually annotated 3 times for cluster FA.
- Start number 30 was manually annotated 1 time for cluster FA.

Info for manual annotations of cluster FB:

- Start number 24 was manually annotated 2 times for cluster FB.

Info for manual annotations of cluster FF:

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

Info for manual annotations of cluster FO:

- Start number 30 was manually annotated 2 times for cluster FO.

### ***Gene Information:***

Gene: AWGoat\_38 Start: 34355, Stop: 34708, Start Num: 18

Candidate Starts for AWGoat\_38:

(Start: 18 @34355 has 2 MA's), (34, 34463), (43, 34508), (66, 34631), (69, 34667),

Gene: Aikyam\_28 Start: 20431, Stop: 20736, Start Num: 26

Candidate Starts for Aikyam\_28:

(Start: 26 @20431 has 18 MA's), (33, 20482), (46, 20548), (51, 20572), (55, 20590), (58, 20611), (60, 20617), (62, 20629),

Gene: ArizonaGT\_21 Start: 17942, Stop: 18202, Start Num: 32  
Candidate Starts for ArizonaGT\_21:  
(1, 17210), (4, 17399), (6, 17477), (7, 17525), (8, 17612), (25, 17897), (31, 17936), (Start: 32 @17942 has 24 MA's), (39, 17996), (42, 18005), (66, 18122),

Gene: Austintatious\_22 Start: 17098, Stop: 17331, Start Num: 32  
Candidate Starts for Austintatious\_22:  
(Start: 32 @17098 has 24 MA's), (36, 17131), (66, 17254),

Gene: Auxilium\_28 Start: 20421, Stop: 20726, Start Num: 26  
Candidate Starts for Auxilium\_28:  
(Start: 26 @20421 has 18 MA's), (33, 20472), (46, 20538), (51, 20562), (55, 20580), (58, 20601), (60, 20607), (62, 20619),

Gene: AxeJC\_21 Start: 17926, Stop: 18183, Start Num: 32  
Candidate Starts for AxeJC\_21:  
(1, 17209), (4, 17398), (6, 17476), (7, 17524), (25, 17881), (31, 17920), (Start: 32 @17926 has 24 MA's), (39, 17980), (42, 17989), (66, 18106),

Gene: Bachaco\_23 Start: 20374, Stop: 20691, Start Num: 20  
Candidate Starts for Bachaco\_23:  
(Start: 20 @20374 has 4 MA's), (35, 20461), (43, 20503), (45, 20515), (56, 20566), (66, 20626),

Gene: BasketStar\_28 Start: 20475, Stop: 20780, Start Num: 26  
Candidate Starts for BasketStar\_28:  
(Start: 26 @20475 has 18 MA's), (33, 20526), (46, 20592), (51, 20616), (55, 20634), (58, 20655), (60, 20661), (62, 20673), (71, 20745),

Gene: BenchScraper\_28 Start: 20436, Stop: 20741, Start Num: 26  
Candidate Starts for BenchScraper\_28:  
(Start: 26 @20436 has 18 MA's), (33, 20487), (46, 20553), (51, 20577), (55, 20595), (58, 20616), (60, 20622), (62, 20634),

Gene: Bioscum\_22 Start: 17134, Stop: 17367, Start Num: 32  
Candidate Starts for Bioscum\_22:  
(Start: 32 @17134 has 24 MA's), (36, 17167), (66, 17290),

Gene: BlueShadow\_28 Start: 20421, Stop: 20726, Start Num: 26  
Candidate Starts for BlueShadow\_28:  
(Start: 26 @20421 has 18 MA's), (33, 20472), (46, 20538), (51, 20562), (55, 20580), (58, 20601), (60, 20607), (62, 20619), (71, 20691),

Gene: Celaena\_23 Start: 20322, Stop: 20639, Start Num: 20  
Candidate Starts for Celaena\_23:  
(Start: 20 @20322 has 4 MA's), (35, 20409), (43, 20451), (45, 20463), (56, 20514), (66, 20574),

Gene: CocoCinnamon\_27 Start: 20011, Stop: 20283, Start Num: 30  
Candidate Starts for CocoCinnamon\_27:  
(Start: 30 @20011 has 3 MA's), (61, 20170), (63, 20182), (66, 20206),

Gene: CookieBear\_28 Start: 20421, Stop: 20726, Start Num: 26  
Candidate Starts for CookieBear\_28:

(Start: 26 @20421 has 18 MA's), (33, 20472), (46, 20538), (51, 20562), (55, 20580), (58, 20601), (60, 20607), (62, 20619),

Gene: Cumberbatch\_21 Start: 17942, Stop: 18202, Start Num: 32

Candidate Starts for Cumberbatch\_21:

(1, 17210), (4, 17399), (6, 17477), (7, 17525), (8, 17612), (25, 17897), (31, 17936), (Start: 32 @17942 has 24 MA's), (39, 17996), (42, 18005), (66, 18122),

Gene: DaRealMyers\_23 Start: 19333, Stop: 19587, Start Num: 32

Candidate Starts for DaRealMyers\_23:

(Start: 32 @19333 has 24 MA's), (60, 19471), (64, 19498), (66, 19510),

Gene: Darolandstone\_23 Start: 19517, Stop: 19762, Start Num: 32

Candidate Starts for Darolandstone\_23:

(12, 19388), (Start: 32 @19517 has 24 MA's), (47, 19595), (51, 19610), (66, 19673),

Gene: Ding\_28 Start: 20382, Stop: 20687, Start Num: 26

Candidate Starts for Ding\_28:

(14, 20298), (22, 20364), (Start: 26 @20382 has 18 MA's), (33, 20433), (37, 20457), (46, 20499), (58, 20562), (60, 20568), (64, 20595),

Gene: EastWest\_30 Start: 25176, Stop: 25514, Start Num: 21

Candidate Starts for EastWest\_30:

(Start: 21 @25176 has 2 MA's), (35, 25257), (41, 25293), (43, 25299), (47, 25320), (50, 25332), (66, 25422), (70, 25461),

Gene: Eastland\_21 Start: 17911, Stop: 18168, Start Num: 32

Candidate Starts for Eastland\_21:

(1, 17194), (4, 17383), (6, 17461), (7, 17509), (25, 17866), (31, 17905), (Start: 32 @17911 has 24 MA's), (39, 17965), (42, 17974), (66, 18091),

Gene: Eileen\_26 Start: 20113, Stop: 20415, Start Num: 26

Candidate Starts for Eileen\_26:

(Start: 26 @20113 has 18 MA's), (33, 20164), (55, 20272), (58, 20293), (60, 20299), (62, 20311), (64, 20326),

Gene: Eklok\_21 Start: 17926, Stop: 18183, Start Num: 32

Candidate Starts for Eklok\_21:

(1, 17209), (4, 17398), (6, 17476), (7, 17524), (25, 17881), (31, 17920), (Start: 32 @17926 has 24 MA's), (39, 17980), (42, 17989), (66, 18106),

Gene: FlameThrower\_23 Start: 19859, Stop: 20176, Start Num: 20

Candidate Starts for FlameThrower\_23:

(10, 19682), (11, 19763), (Start: 20 @19859 has 4 MA's), (35, 19946), (43, 19988), (45, 20000), (56, 20051), (66, 20111), (72, 20147),

Gene: FrumpyGal\_21 Start: 17911, Stop: 18168, Start Num: 32

Candidate Starts for FrumpyGal\_21:

(1, 17194), (4, 17383), (6, 17461), (7, 17509), (25, 17866), (31, 17905), (Start: 32 @17911 has 24 MA's), (39, 17965), (42, 17974), (66, 18091),

Gene: GUPitcher\_23 Start: 18548, Stop: 18850, Start Num: 26

Candidate Starts for GUPitcher\_23:

(Start: 26 @18548 has 18 MA's), (43, 18647), (55, 18704), (64, 18758), (66, 18770), (71, 18815),

Gene: Gibbzilla\_25 Start: 16637, Stop: 16939, Start Num: 26

Candidate Starts for Gibbzilla\_25:

(Start: 26 @16637 has 18 MA's), (33, 16685), (51, 16775), (55, 16793), (62, 16832), (65, 16856),

Gene: Globfish\_28 Start: 20655, Stop: 20960, Start Num: 26

Candidate Starts for Globfish\_28:

(23, 20646), (Start: 26 @20655 has 18 MA's), (33, 20706), (51, 20796), (58, 20835), (62, 20853), (66, 20880),

Gene: HFrancette\_21 Start: 17957, Stop: 18214, Start Num: 32

Candidate Starts for HFrancette\_21:

(1, 17225), (4, 17414), (6, 17492), (7, 17540), (8, 17627), (25, 17912), (31, 17951), (Start: 32 @17957 has 24 MA's), (39, 18011), (42, 18020), (66, 18137),

Gene: Henrique\_27 Start: 20198, Stop: 20500, Start Num: 26

Candidate Starts for Henrique\_27:

(2, 19532), (Start: 26 @20198 has 18 MA's), (33, 20249), (51, 20339), (52, 20342), (55, 20357), (57, 20369), (58, 20378), (60, 20384), (62, 20396), (63, 20399), (64, 20411),

Gene: Hillester\_28 Start: 20421, Stop: 20726, Start Num: 26

Candidate Starts for Hillester\_28:

(Start: 26 @20421 has 18 MA's), (33, 20472), (46, 20538), (51, 20562), (55, 20580), (58, 20601), (60, 20607), (62, 20619),

Gene: HotPotato\_26 Start: 20119, Stop: 20421, Start Num: 26

Candidate Starts for HotPotato\_26:

(Start: 26 @20119 has 18 MA's), (55, 20278), (57, 20290), (58, 20299), (60, 20305), (62, 20317), (64, 20332),

Gene: Ididsumtinwong\_22 Start: 17134, Stop: 17367, Start Num: 32

Candidate Starts for Ididsumtinwong\_22:

(Start: 32 @17134 has 24 MA's), (36, 17167), (66, 17290),

Gene: Ignacio\_21 Start: 17957, Stop: 18214, Start Num: 32

Candidate Starts for Ignacio\_21:

(1, 17225), (4, 17414), (6, 17492), (7, 17540), (8, 17627), (25, 17912), (31, 17951), (Start: 32 @17957 has 24 MA's), (39, 18011), (42, 18020), (66, 18137),

Gene: IsHungry\_26 Start: 19976, Stop: 20278, Start Num: 26

Candidate Starts for IsHungry\_26:

(Start: 26 @19976 has 18 MA's), (33, 20027), (55, 20135), (58, 20156), (60, 20162),

Gene: Karkharias\_26 Start: 20115, Stop: 20417, Start Num: 26

Candidate Starts for Karkharias\_26:

(Start: 26 @20115 has 18 MA's), (33, 20166), (55, 20274), (58, 20295), (60, 20301), (62, 20313),

Gene: Katzastrophic\_23 Start: 19980, Stop: 20297, Start Num: 20

Candidate Starts for Katzastrophic\_23:

(Start: 20 @19980 has 4 MA's), (35, 20067), (43, 20109), (45, 20121), (56, 20172), (66, 20232), (72, 20268),

Gene: Khuang\_21 Start: 17688, Stop: 17984, Start Num: 26  
Candidate Starts for Khuang\_21:  
(23, 17679), (Start: 26 @17688 has 18 MA's), (33, 17739), (37, 17763), (58, 17868), (60, 17874), (62, 17886), (64, 17901), (66, 17913),

Gene: Kumotta\_24 Start: 18861, Stop: 19166, Start Num: 24  
Candidate Starts for Kumotta\_24:  
(Start: 24 @18861 has 2 MA's), (48, 18996), (65, 19092),

Gene: Lasker\_28 Start: 20429, Stop: 20734, Start Num: 26  
Candidate Starts for Lasker\_28:  
(Start: 26 @20429 has 18 MA's), (33, 20480), (46, 20546), (51, 20570), (55, 20588), (58, 20609), (60, 20615), (62, 20627),

Gene: LilyBell\_26 Start: 20124, Stop: 20429, Start Num: 26  
Candidate Starts for LilyBell\_26:  
(17, 20067), (23, 20115), (Start: 26 @20124 has 18 MA's), (33, 20178), (55, 20286), (58, 20307), (60, 20313), (62, 20325),

Gene: Lishka\_22 Start: 17098, Stop: 17331, Start Num: 32  
Candidate Starts for Lishka\_22:  
(Start: 32 @17098 has 24 MA's), (36, 17131), (66, 17254),

Gene: Maja\_24 Start: 18850, Stop: 19128, Start Num: 30  
Candidate Starts for Maja\_24:  
(27, 18832), (Start: 30 @18850 has 3 MA's), (63, 19027), (65, 19048), (66, 19051),

Gene: MargaretKali\_24 Start: 18496, Stop: 18801, Start Num: 24  
Candidate Starts for MargaretKali\_24:  
(Start: 24 @18496 has 2 MA's), (48, 18631), (65, 18727),

Gene: MaterMagnus\_28 Start: 20431, Stop: 20736, Start Num: 26  
Candidate Starts for MaterMagnus\_28:  
(Start: 26 @20431 has 18 MA's), (33, 20482), (46, 20548), (51, 20572), (55, 20590), (58, 20611), (60, 20617), (62, 20629),

Gene: MidnightRain\_28 Start: 20420, Stop: 20725, Start Num: 26  
Candidate Starts for MidnightRain\_28:  
(Start: 26 @20420 has 18 MA's), (33, 20471), (46, 20537), (51, 20561), (55, 20579), (58, 20600), (60, 20606), (62, 20618),

Gene: MillySue\_26 Start: 19546, Stop: 19851, Start Num: 26  
Candidate Starts for MillySue\_26:  
(2, 18883), (Start: 26 @19546 has 18 MA's), (33, 19597), (55, 19705), (62, 19744), (64, 19759),

Gene: Mojorita\_22 Start: 17147, Stop: 17407, Start Num: 32  
Candidate Starts for Mojorita\_22:  
(15, 17030), (Start: 32 @17147 has 24 MA's), (43, 17213), (66, 17327),

Gene: NidoQ\_26 Start: 20786, Stop: 21058, Start Num: 30  
Candidate Starts for NidoQ\_26:  
(28, 20771), (29, 20780), (Start: 30 @20786 has 3 MA's), (40, 20858), (49, 20894), (53, 20909), (66, 20987),

Gene: PapayaSalad\_22 Start: 17109, Stop: 17342, Start Num: 32

Candidate Starts for PapayaSalad\_22:

(Start: 32 @17109 has 24 MA's), (36, 17142), (66, 17265),

Gene: Peas\_26 Start: 20113, Stop: 20415, Start Num: 26

Candidate Starts for Peas\_26:

(Start: 26 @20113 has 18 MA's), (33, 20164), (55, 20272), (58, 20293), (60, 20299), (62, 20311), (64, 20326),

Gene: Picard\_22 Start: 17138, Stop: 17398, Start Num: 32

Candidate Starts for Picard\_22:

(15, 17024), (Start: 32 @17138 has 24 MA's), (43, 17204), (66, 17318),

Gene: Piccadilly\_21 Start: 17910, Stop: 18167, Start Num: 32

Candidate Starts for Piccadilly\_21:

(1, 17193), (4, 17382), (6, 17460), (7, 17508), (25, 17865), (31, 17904), (Start: 32 @17910 has 24 MA's), (39, 17964), (42, 17973), (66, 18090),

Gene: Pigu\_23 Start: 17919, Stop: 18197, Start Num: 30

Candidate Starts for Pigu\_23:

(Start: 30 @17919 has 3 MA's), (63, 18096), (65, 18117), (66, 18120),

Gene: RadFad\_28 Start: 20421, Stop: 20726, Start Num: 26

Candidate Starts for RadFad\_28:

(Start: 26 @20421 has 18 MA's), (33, 20472), (46, 20538), (51, 20562), (55, 20580), (58, 20601), (60, 20607), (62, 20619),

Gene: Raleigh\_23 Start: 19748, Stop: 19987, Start Num: 32

Candidate Starts for Raleigh\_23:

(Start: 32 @19748 has 24 MA's), (47, 19826), (51, 19841), (66, 19904),

Gene: Richie\_28 Start: 20436, Stop: 20741, Start Num: 26

Candidate Starts for Richie\_28:

(Start: 26 @20436 has 18 MA's), (33, 20487), (46, 20553), (51, 20577), (55, 20595), (58, 20616), (60, 20622), (62, 20634),

Gene: RootBeer\_23 Start: 17990, Stop: 18268, Start Num: 30

Candidate Starts for RootBeer\_23:

(9, 17732), (28, 17975), (Start: 30 @17990 has 3 MA's), (66, 18188), (70, 18227),

Gene: SV1\_22 Start: 17352, Stop: 17588, Start Num: 32

Candidate Starts for SV1\_22:

(Start: 32 @17352 has 24 MA's), (66, 17508),

Gene: Sashimi\_26 Start: 18795, Stop: 19100, Start Num: 26

Candidate Starts for Sashimi\_26:

(19, 18762), (Start: 26 @18795 has 18 MA's), (33, 18846), (40, 18888), (54, 18948), (55, 18954), (59, 18978), (60, 18981), (62, 18993), (64, 19008), (65, 19017),

Gene: Schlegelian\_21 Start: 17946, Stop: 18206, Start Num: 32

Candidate Starts for Schlegelian\_21:

(1, 17208), (3, 17391), (4, 17397), (5, 17427), (6, 17475), (7, 17523), (8, 17610), (25, 17901), (31, 17940), (Start: 32 @17946 has 24 MA's), (39, 18000), (42, 18009), (66, 18126),

Gene: SilentRX\_40 Start: 35414, Stop: 35743, Start Num: 18

Candidate Starts for SilentRX\_40:

(13, 35366), (Start: 18 @35414 has 2 MA's), (33, 35498), (38, 35525), (44, 35552), (66, 35666), (68, 35681),

Gene: SoJo\_23 Start: 19328, Stop: 19582, Start Num: 32

Candidate Starts for SoJo\_23:

(Start: 32 @19328 has 24 MA's), (60, 19466), (64, 19493), (66, 19505),

Gene: SpicyFrank\_28 Start: 20656, Stop: 20961, Start Num: 26

Candidate Starts for SpicyFrank\_28:

(Start: 26 @20656 has 18 MA's), (33, 20707), (51, 20797), (58, 20836), (62, 20854), (66, 20881),

Gene: ToastyFinz\_22 Start: 19068, Stop: 19331, Start Num: 32

Candidate Starts for ToastyFinz\_22:

(Start: 32 @19068 has 24 MA's), (43, 19134), (66, 19248),

Gene: Tubberson\_23 Start: 19333, Stop: 19587, Start Num: 32

Candidate Starts for Tubberson\_23:

(Start: 32 @19333 has 24 MA's), (60, 19471), (64, 19498), (66, 19510),

Gene: Vondra\_21 Start: 17962, Stop: 18219, Start Num: 32

Candidate Starts for Vondra\_21:

(1, 17224), (4, 17413), (6, 17491), (7, 17539), (8, 17626), (25, 17917), (31, 17956), (Start: 32 @17962 has 24 MA's), (39, 18016), (42, 18025), (66, 18142),

Gene: Windest\_29 Start: 20486, Stop: 20791, Start Num: 26

Candidate Starts for Windest\_29:

(Start: 26 @20486 has 18 MA's), (33, 20537), (46, 20603), (51, 20627), (55, 20645), (58, 20666), (60, 20672), (62, 20684), (71, 20756),

Gene: Wyborn\_30 Start: 25584, Stop: 25931, Start Num: 21

Candidate Starts for Wyborn\_30:

(16, 25542), (Start: 21 @25584 has 2 MA's), (33, 25656), (34, 25668), (35, 25671), (41, 25707), (43, 25713), (45, 25725), (53, 25758), (56, 25776), (66, 25836), (67, 25842),

Gene: YoungHarleezy\_28 Start: 20434, Stop: 20739, Start Num: 26

Candidate Starts for YoungHarleezy\_28:

(Start: 26 @20434 has 18 MA's), (33, 20485), (46, 20551), (51, 20575), (55, 20593), (58, 20614), (60, 20620), (62, 20632),