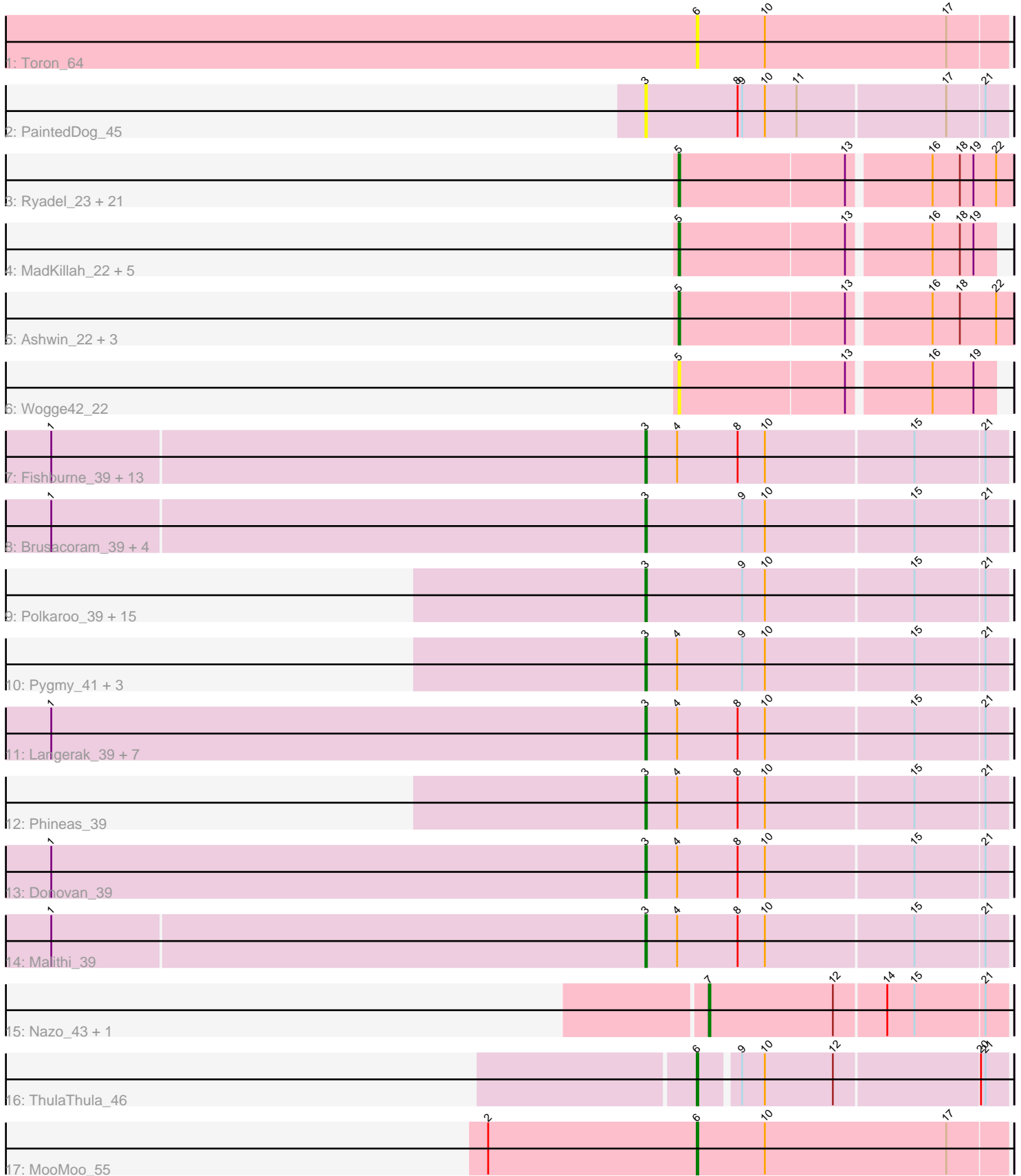


Pham 294628



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 294628 Report

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

Pham number 294628 has 89 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Toron\_64
- Track 2 : PaintedDog\_45
- Track 3 : Ryadel\_23, Vorrps\_21, Zebo\_20, Murai\_21, YoyoKar\_21, Familton\_21, NiebruSaylor\_21, Idergollasper\_20, Imara\_21, FoulBall\_20, SchoolBus\_20, Winget\_21, Firecracker\_21, KingPhillip3\_20, Schuy\_22, JangDynasty\_20, Shida\_21, TelAviv\_20, Vagabond\_21, Catdawg\_20, Krili\_21, Blessica\_21
- Track 4 : MadKillah\_22, Bora\_21, YungJamal\_22, Smooch\_22, Alkhayr\_21, Corndog\_23
- Track 5 : Ashwin\_22, Wildflower\_21, Dylan\_21, Zakhe101\_22
- Track 6 : Wogge42\_22
- Track 7 : Fishburne\_39, Bartholomew\_38, Venti\_39, Dynamo\_39, BronnyJr\_39, Vidya\_39, Necropolis\_39, Chubbello\_39, FirstPlacePfu\_39, Kari\_39, Jebeks\_40, Etoile\_39, Sonah\_39, Zilizebeth\_39
- Track 8 : Brusacoram\_39, Xen0\_41, Atcoo\_39, GreaseLightnin\_39, Thespis\_39
- Track 9 : Polkaroo\_39, Bhagsy\_39, KilKor\_39, Phalm\_39, PeanutPie\_39, Jung\_38, Gavriela\_39, Willsammy\_38, Megiddo\_39, Bunnies\_39, StevieRay\_39, Juniormint\_39, Ksquared\_39, StressBall\_39, CactusJack\_39, Glaske\_39
- Track 10 : Pygmy\_41, Bogie\_41, Shipwreck\_41, Camster\_39
- Track 11 : Langerak\_39, Mangethe\_39, Majeke\_39, HUHilltop\_39, Arib1\_39, GaloreK\_39, Techage\_39, Phegasus\_39
- Track 12 : Phineas\_39
- Track 13 : Donovan\_39
- Track 14 : Malithi\_39
- Track 15 : Nazo\_43, BigNuz\_42
- Track 16 : ThulaThula\_46
- Track 17 : MooMoo\_55

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

The start number called the most often in the published annotations is 3, it was called in 44 of the 77 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Arib1\_39, Atcoo\_39, Bartholomew\_38, Bhagsy\_39, Bogie\_41, BronnyJr\_39, Brusacoram\_39, Bunnies\_39, CactusJack\_39, Camster\_39, Chubbello\_39, Donovan\_39, Dynamo\_39, Etoile\_39, FirstPlacePfu\_39, Fishburne\_39, GaloreK\_39, Gavriela\_39, Glaske\_39, GreaseLightnin\_39, HUHilltop\_39, Jebeks\_40, Jung\_38, Juniormint\_39, Kari\_39, KilKor\_39, Ksquared\_39, Langerak\_39, Majeke\_39, Malithi\_39, Mangethe\_39, Megiddo\_39, Necropolis\_39, PaintedDog\_45, PeanutPie\_39, Phalm\_39, Phegasus\_39, Phineas\_39, Polkaroo\_39, Pygmy\_41, Shipwreck\_41, Sonah\_39, StevieRay\_39, StressBall\_39, Techage\_39, Thespis\_39, Venti\_39, Vidya\_39, Willsammy\_38, Xeno\_41, Zilizebeth\_39,

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

- 

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

- Alkhayr\_21, Ashwin\_22, BigNuz\_42, Blessica\_21, Bora\_21, Catdawg\_20, Corndog\_23, Dylan\_21, Familton\_21, Firecracker\_21, FoulBall\_20, Idergollasper\_20, Imara\_21, JangDynasty\_20, KingPhillip3\_20, Krili\_21, MadKillah\_22, MooMoo\_55, Murai\_21, Nazo\_43, NiebruSaylor\_21, Ryadel\_23, SchoolBus\_20, Schuy\_22, Shida\_21, Smooch\_22, TelAviv\_20, ThulaThula\_46, Toron\_64, Vagabond\_21, Vorrrps\_21, Wildflower\_21, Winget\_21, Wogge42\_22, YoyoKar\_21, YungJamal\_22, Zakhe101\_22, Zebo\_20,

### Summary by start number:

Start 3:

- Found in 51 of 89 ( 57.3% ) of genes in pham
- Manual Annotations of this start: 44 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arib1\_39 (P1), Atcoo\_39 (P1), Bartholomew\_38 (P1), Bhagsy\_39 (P1), Bogie\_41 (P1), BronnyJr\_39 (P1), Brusacoram\_39 (P1), Bunnies\_39 (P1), CactusJack\_39 (P1), Camster\_39 (P1), Chubbello\_39 (P1), Donovan\_39 (P1), Dynamo\_39 (P1), Etoile\_39 (P1), FirstPlacePfu\_39 (P1), Fishburne\_39 (P1), GaloreK\_39 (P1), Gavriela\_39 (P1), Glaske\_39 (P1), GreaseLightnin\_39 (P1), HUHilltop\_39 (P1), Jebeks\_40 (P1), Jung\_38 (P1), Juniormint\_39 (P1), Kari\_39 (P1), KilKor\_39 (P1), Ksquared\_39 (P1), Langerak\_39 (P1), Majeke\_39 (P1), Malithi\_39 (P1), Mangethe\_39 (P1), Megiddo\_39 (P1), Necropolis\_39 (P1), PaintedDog\_45 (I1), PeanutPie\_39 (P1), Phalm\_39 (P1), Phegasus\_39 (P1), Phineas\_39 (P1), Polkaroo\_39 (P1), Pygmy\_41 (P1), Shipwreck\_41 (P1), Sonah\_39 (P1), StevieRay\_39 (P1), StressBall\_39 (P1), Techage\_39 (P1), Thespis\_39 (P1), Venti\_39 (P1), Vidya\_39 (P1), Willsammy\_38 (P1), Xeno\_41 (N), Zilizebeth\_39 (P1),

Start 5:

- Found in 33 of 89 ( 37.1% ) of genes in pham
- Manual Annotations of this start: 29 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alkhayr\_21 (O), Ashwin\_22 (O), Blessica\_21 (O), Bora\_21 (O), Catdawg\_20 (O), Corndog\_23 (O), Dylan\_21 (O), Familton\_21 (O), Firecracker\_21 (O), FoulBall\_20 (O), Idergollasper\_20 (O), Imara\_21 (O), JangDynasty\_20 (O), KingPhillip3\_20 (O), Krili\_21 (O), MadKillah\_22 (O), Murai\_21 (O), NiebruSaylor\_21 (O), Ryadel\_23 (O), SchoolBus\_20 (O), Schuy\_22 (O), Shida\_21 (O), Smooch\_22 (O), TelAviv\_20 (O), Vagabond\_21 (O), Vorrrps\_21 (O), Wildflower\_21 (O), Winget\_21 (O), Wogge42\_22 (O), YoyoKar\_21

(O), YungJamal\_22 (O), Zakhe101\_22 (O), Zebo\_20 (O),

Start 6:

- Found in 3 of 89 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 2 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MooMoo\_55 (singleton), ThulaThula\_46 (P5), Toron\_64 (F6),

Start 7:

- Found in 2 of 89 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 2 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BigNuz\_42 (P4), Nazo\_43 (P4),

### **Summary by clusters:**

There are 8 clusters represented in this pham: singleton, P1, F6, P4, P5, I1, O, N,

Info for manual annotations of cluster N:

- Start number 3 was manually annotated 1 time for cluster N.

Info for manual annotations of cluster O:

- Start number 5 was manually annotated 29 times for cluster O.

Info for manual annotations of cluster P1:

- Start number 3 was manually annotated 43 times for cluster P1.

Info for manual annotations of cluster P4:

- Start number 7 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 6 was manually annotated 1 time for cluster P5.

### **Gene Information:**

Gene: Alkhayr\_21 Start: 10248, Stop: 10448, Start Num: 5

Candidate Starts for Alkhayr\_21:

(Start: 5 @10248 has 29 MA's), (13, 10356), (16, 10407), (18, 10425), (19, 10434),

Gene: Arib1\_39 Start: 30316, Stop: 30549, Start Num: 3

Candidate Starts for Arib1\_39:

(1, 29923), (Start: 3 @30316 has 44 MA's), (4, 30337), (8, 30376), (10, 30394), (15, 30490), (21, 30535),

Gene: Ashwin\_22 Start: 10468, Stop: 10680, Start Num: 5

Candidate Starts for Ashwin\_22:

(Start: 5 @10468 has 29 MA's), (13, 10576), (16, 10627), (18, 10645), (22, 10669),

Gene: Atcoo\_39 Start: 30787, Stop: 31020, Start Num: 3

Candidate Starts for Atcoo\_39:

(1, 30397), (Start: 3 @30787 has 44 MA's), (9, 30850), (10, 30865), (15, 30961), (21, 31006),

Gene: Bartholomew\_38 Start: 30310, Stop: 30543, Start Num: 3

Candidate Starts for Bartholomew\_38:

(1, 29920), (Start: 3 @30310 has 44 MA's), (4, 30331), (8, 30370), (10, 30388), (15, 30484), (21, 30529),

Gene: Bhagsy\_39 Start: 30302, Stop: 30535, Start Num: 3

Candidate Starts for Bhagsy\_39:

(Start: 3 @30302 has 44 MA's), (9, 30365), (10, 30380), (15, 30476), (21, 30521),

Gene: BigNuz\_42 Start: 32428, Stop: 32619, Start Num: 7

Candidate Starts for BigNuz\_42:

(Start: 7 @32428 has 2 MA's), (12, 32509), (14, 32542), (15, 32560), (21, 32605),

Gene: Blessica\_21 Start: 10271, Stop: 10483, Start Num: 5

Candidate Starts for Blessica\_21:

(Start: 5 @10271 has 29 MA's), (13, 10379), (16, 10430), (18, 10448), (19, 10457), (22, 10472),

Gene: Bogie\_41 Start: 32086, Stop: 32319, Start Num: 3

Candidate Starts for Bogie\_41:

(Start: 3 @32086 has 44 MA's), (4, 32107), (9, 32149), (10, 32164), (15, 32260), (21, 32305),

Gene: Bora\_21 Start: 10278, Stop: 10478, Start Num: 5

Candidate Starts for Bora\_21:

(Start: 5 @10278 has 29 MA's), (13, 10386), (16, 10437), (18, 10455), (19, 10464),

Gene: BronnyJr\_39 Start: 30807, Stop: 31040, Start Num: 3

Candidate Starts for BronnyJr\_39:

(1, 30417), (Start: 3 @30807 has 44 MA's), (4, 30828), (8, 30867), (10, 30885), (15, 30981), (21, 31026),

Gene: Brusacoram\_39 Start: 30293, Stop: 30526, Start Num: 3

Candidate Starts for Brusacoram\_39:

(1, 29903), (Start: 3 @30293 has 44 MA's), (9, 30356), (10, 30371), (15, 30467), (21, 30512),

Gene: Bunnies\_39 Start: 30317, Stop: 30550, Start Num: 3

Candidate Starts for Bunnies\_39:

(Start: 3 @30317 has 44 MA's), (9, 30380), (10, 30395), (15, 30491), (21, 30536),

Gene: CactusJack\_39 Start: 30557, Stop: 30790, Start Num: 3

Candidate Starts for CactusJack\_39:

(Start: 3 @30557 has 44 MA's), (9, 30620), (10, 30635), (15, 30731), (21, 30776),

Gene: Camster\_39 Start: 30333, Stop: 30566, Start Num: 3

Candidate Starts for Camster\_39:

(Start: 3 @30333 has 44 MA's), (4, 30354), (9, 30396), (10, 30411), (15, 30507), (21, 30552),

Gene: Catdawg\_20 Start: 9877, Stop: 10089, Start Num: 5

Candidate Starts for Catdawg\_20:

(Start: 5 @9877 has 29 MA's), (13, 9985), (16, 10036), (18, 10054), (19, 10063), (22, 10078),

Gene: Chubbello\_39 Start: 30306, Stop: 30539, Start Num: 3

Candidate Starts for Chubbello\_39:

(1, 29916), (Start: 3 @30306 has 44 MA's), (4, 30327), (8, 30366), (10, 30384), (15, 30480), (21, 30525),

Gene: Corndog\_23 Start: 10580, Stop: 10780, Start Num: 5

Candidate Starts for Corndog\_23:

(Start: 5 @10580 has 29 MA's), (13, 10688), (16, 10739), (18, 10757), (19, 10766),

Gene: Donovan\_39 Start: 30333, Stop: 30566, Start Num: 3

Candidate Starts for Donovan\_39:

(1, 29940), (Start: 3 @30333 has 44 MA's), (4, 30354), (8, 30393), (10, 30411), (15, 30507), (21, 30552),

Gene: Dylan\_21 Start: 10468, Stop: 10680, Start Num: 5

Candidate Starts for Dylan\_21:

(Start: 5 @10468 has 29 MA's), (13, 10576), (16, 10627), (18, 10645), (22, 10669),

Gene: Dynamo\_39 Start: 30718, Stop: 30951, Start Num: 3

Candidate Starts for Dynamo\_39:

(1, 30328), (Start: 3 @30718 has 44 MA's), (4, 30739), (8, 30778), (10, 30796), (15, 30892), (21, 30937),

Gene: Etoile\_39 Start: 30310, Stop: 30543, Start Num: 3

Candidate Starts for Etoile\_39:

(1, 29920), (Start: 3 @30310 has 44 MA's), (4, 30331), (8, 30370), (10, 30388), (15, 30484), (21, 30529),

Gene: Familton\_21 Start: 9878, Stop: 10090, Start Num: 5

Candidate Starts for Familton\_21:

(Start: 5 @9878 has 29 MA's), (13, 9986), (16, 10037), (18, 10055), (19, 10064), (22, 10079),

Gene: Firecracker\_21 Start: 10201, Stop: 10413, Start Num: 5

Candidate Starts for Firecracker\_21:

(Start: 5 @10201 has 29 MA's), (13, 10309), (16, 10360), (18, 10378), (19, 10387), (22, 10402),

Gene: FirstPlacePfu\_39 Start: 30342, Stop: 30575, Start Num: 3

Candidate Starts for FirstPlacePfu\_39:

(1, 29952), (Start: 3 @30342 has 44 MA's), (4, 30363), (8, 30402), (10, 30420), (15, 30516), (21, 30561),

Gene: Fishburne\_39 Start: 30310, Stop: 30543, Start Num: 3

Candidate Starts for Fishburne\_39:

(1, 29920), (Start: 3 @30310 has 44 MA's), (4, 30331), (8, 30370), (10, 30388), (15, 30484), (21, 30529),

Gene: FoulBall\_20 Start: 9878, Stop: 10090, Start Num: 5

Candidate Starts for FoulBall\_20:

(Start: 5 @9878 has 29 MA's), (13, 9986), (16, 10037), (18, 10055), (19, 10064), (22, 10079),

Gene: GaloreK\_39 Start: 30306, Stop: 30539, Start Num: 3

Candidate Starts for GaloreK\_39:

(1, 29913), (Start: 3 @30306 has 44 MA's), (4, 30327), (8, 30366), (10, 30384), (15, 30480), (21, 30525),

Gene: Gavriela\_39 Start: 30557, Stop: 30790, Start Num: 3

Candidate Starts for Gavriela\_39:

(Start: 3 @30557 has 44 MA's), (9, 30620), (10, 30635), (15, 30731), (21, 30776),

Gene: Glaske\_39 Start: 30557, Stop: 30790, Start Num: 3

Candidate Starts for Glaske\_39:

(Start: 3 @30557 has 44 MA's), (9, 30620), (10, 30635), (15, 30731), (21, 30776),

Gene: GreaseLightnin\_39 Start: 30546, Stop: 30779, Start Num: 3

Candidate Starts for GreaseLightnin\_39:

(1, 30156), (Start: 3 @30546 has 44 MA's), (9, 30609), (10, 30624), (15, 30720), (21, 30765),

Gene: HUHilltop\_39 Start: 30343, Stop: 30576, Start Num: 3

Candidate Starts for HUHilltop\_39:

(1, 29950), (Start: 3 @30343 has 44 MA's), (4, 30364), (8, 30403), (10, 30421), (15, 30517), (21, 30562),

Gene: Idergollasper\_20 Start: 9878, Stop: 10090, Start Num: 5

Candidate Starts for Idergollasper\_20:

(Start: 5 @9878 has 29 MA's), (13, 9986), (16, 10037), (18, 10055), (19, 10064), (22, 10079),

Gene: Imara\_21 Start: 10131, Stop: 10343, Start Num: 5

Candidate Starts for Imara\_21:

(Start: 5 @10131 has 29 MA's), (13, 10239), (16, 10290), (18, 10308), (19, 10317), (22, 10332),

Gene: JangDynasty\_20 Start: 9967, Stop: 10179, Start Num: 5

Candidate Starts for JangDynasty\_20:

(Start: 5 @9967 has 29 MA's), (13, 10075), (16, 10126), (18, 10144), (19, 10153), (22, 10168),

Gene: Jebeks\_40 Start: 30295, Stop: 30528, Start Num: 3

Candidate Starts for Jebeks\_40:

(1, 29905), (Start: 3 @30295 has 44 MA's), (4, 30316), (8, 30355), (10, 30373), (15, 30469), (21, 30514),

Gene: Jung\_38 Start: 30264, Stop: 30497, Start Num: 3

Candidate Starts for Jung\_38:

(Start: 3 @30264 has 44 MA's), (9, 30327), (10, 30342), (15, 30438), (21, 30483),

Gene: Juniormint\_39 Start: 30339, Stop: 30572, Start Num: 3

Candidate Starts for Juniormint\_39:

(Start: 3 @30339 has 44 MA's), (9, 30402), (10, 30417), (15, 30513), (21, 30558),

Gene: Kari\_39 Start: 30307, Stop: 30540, Start Num: 3

Candidate Starts for Kari\_39:

(1, 29917), (Start: 3 @30307 has 44 MA's), (4, 30328), (8, 30367), (10, 30385), (15, 30481), (21, 30526),

Gene: KilKor\_39 Start: 30557, Stop: 30790, Start Num: 3

Candidate Starts for KilKor\_39:

(Start: 3 @30557 has 44 MA's), (9, 30620), (10, 30635), (15, 30731), (21, 30776),

Gene: KingPhillip3\_20 Start: 9878, Stop: 10090, Start Num: 5

Candidate Starts for KingPhillip3\_20:

(Start: 5 @9878 has 29 MA's), (13, 9986), (16, 10037), (18, 10055), (19, 10064), (22, 10079),

Gene: Krili\_21 Start: 10237, Stop: 10449, Start Num: 5

Candidate Starts for Krili\_21:

(Start: 5 @10237 has 29 MA's), (13, 10345), (16, 10396), (18, 10414), (19, 10423), (22, 10438),

Gene: Ksquared\_39 Start: 30317, Stop: 30550, Start Num: 3

Candidate Starts for Ksquared\_39:

(Start: 3 @30317 has 44 MA's), (9, 30380), (10, 30395), (15, 30491), (21, 30536),

Gene: Langerak\_39 Start: 30326, Stop: 30559, Start Num: 3

Candidate Starts for Langerak\_39:

(1, 29933), (Start: 3 @30326 has 44 MA's), (4, 30347), (8, 30386), (10, 30404), (15, 30500), (21, 30545),

Gene: MadKillah\_22 Start: 10270, Stop: 10470, Start Num: 5

Candidate Starts for MadKillah\_22:

(Start: 5 @10270 has 29 MA's), (13, 10378), (16, 10429), (18, 10447), (19, 10456),

Gene: Majeke\_39 Start: 30351, Stop: 30584, Start Num: 3

Candidate Starts for Majeke\_39:

(1, 29958), (Start: 3 @30351 has 44 MA's), (4, 30372), (8, 30411), (10, 30429), (15, 30525), (21, 30570),

Gene: Malithi\_39 Start: 30226, Stop: 30459, Start Num: 3

Candidate Starts for Malithi\_39:

(1, 29836), (Start: 3 @30226 has 44 MA's), (4, 30247), (8, 30286), (10, 30304), (15, 30400), (21, 30445),

Gene: Mangethe\_39 Start: 30351, Stop: 30584, Start Num: 3

Candidate Starts for Mangethe\_39:

(1, 29958), (Start: 3 @30351 has 44 MA's), (4, 30372), (8, 30411), (10, 30429), (15, 30525), (21, 30570),

Gene: Megiddo\_39 Start: 30557, Stop: 30790, Start Num: 3

Candidate Starts for Megiddo\_39:

(Start: 3 @30557 has 44 MA's), (9, 30620), (10, 30635), (15, 30731), (21, 30776),

Gene: MooMoo\_55 Start: 38695, Stop: 38898, Start Num: 6

Candidate Starts for MooMoo\_55:

(2, 38557), (Start: 6 @38695 has 2 MA's), (10, 38740), (17, 38860),

Gene: Murai\_21 Start: 10109, Stop: 10321, Start Num: 5

Candidate Starts for Murai\_21:

(Start: 5 @10109 has 29 MA's), (13, 10217), (16, 10268), (18, 10286), (19, 10295), (22, 10310),

Gene: Nazo\_43 Start: 32625, Stop: 32816, Start Num: 7

Candidate Starts for Nazo\_43:

(Start: 7 @32625 has 2 MA's), (12, 32706), (14, 32739), (15, 32757), (21, 32802),

Gene: Necropolis\_39 Start: 30307, Stop: 30540, Start Num: 3  
Candidate Starts for Necropolis\_39:  
(1, 29917), (Start: 3 @30307 has 44 MA's), (4, 30328), (8, 30367), (10, 30385), (15, 30481), (21, 30526),

Gene: NiebruSaylor\_21 Start: 10109, Stop: 10321, Start Num: 5  
Candidate Starts for NiebruSaylor\_21:  
(Start: 5 @10109 has 29 MA's), (13, 10217), (16, 10268), (18, 10286), (19, 10295), (22, 10310),

Gene: PaintedDog\_45 Start: 32921, Stop: 33154, Start Num: 3  
Candidate Starts for PaintedDog\_45:  
(Start: 3 @32921 has 44 MA's), (8, 32981), (9, 32984), (10, 32999), (11, 33020), (17, 33116), (21, 33140),

Gene: PeanutPie\_39 Start: 30302, Stop: 30535, Start Num: 3  
Candidate Starts for PeanutPie\_39:  
(Start: 3 @30302 has 44 MA's), (9, 30365), (10, 30380), (15, 30476), (21, 30521),

Gene: Phalm\_39 Start: 30557, Stop: 30790, Start Num: 3  
Candidate Starts for Phalm\_39:  
(Start: 3 @30557 has 44 MA's), (9, 30620), (10, 30635), (15, 30731), (21, 30776),

Gene: Phegasus\_39 Start: 30318, Stop: 30551, Start Num: 3  
Candidate Starts for Phegasus\_39:  
(1, 29925), (Start: 3 @30318 has 44 MA's), (4, 30339), (8, 30378), (10, 30396), (15, 30492), (21, 30537),

Gene: Phineas\_39 Start: 30678, Stop: 30911, Start Num: 3  
Candidate Starts for Phineas\_39:  
(Start: 3 @30678 has 44 MA's), (4, 30699), (8, 30738), (10, 30756), (15, 30852), (21, 30897),

Gene: Polkaroo\_39 Start: 30314, Stop: 30547, Start Num: 3  
Candidate Starts for Polkaroo\_39:  
(Start: 3 @30314 has 44 MA's), (9, 30377), (10, 30392), (15, 30488), (21, 30533),

Gene: Pygmy\_41 Start: 32142, Stop: 32375, Start Num: 3  
Candidate Starts for Pygmy\_41:  
(Start: 3 @32142 has 44 MA's), (4, 32163), (9, 32205), (10, 32220), (15, 32316), (21, 32361),

Gene: Ryadel\_23 Start: 10691, Stop: 10903, Start Num: 5  
Candidate Starts for Ryadel\_23:  
(Start: 5 @10691 has 29 MA's), (13, 10799), (16, 10850), (18, 10868), (19, 10877), (22, 10892),

Gene: SchoolBus\_20 Start: 9878, Stop: 10090, Start Num: 5  
Candidate Starts for SchoolBus\_20:  
(Start: 5 @9878 has 29 MA's), (13, 9986), (16, 10037), (18, 10055), (19, 10064), (22, 10079),

Gene: Schuy\_22 Start: 10270, Stop: 10482, Start Num: 5  
Candidate Starts for Schuy\_22:  
(Start: 5 @10270 has 29 MA's), (13, 10378), (16, 10429), (18, 10447), (19, 10456), (22, 10471),

Gene: Shida\_21 Start: 10175, Stop: 10387, Start Num: 5  
Candidate Starts for Shida\_21:

(Start: 5 @10175 has 29 MA's), (13, 10283), (16, 10334), (18, 10352), (19, 10361), (22, 10376),

Gene: Shipwreck\_41 Start: 32117, Stop: 32350, Start Num: 3

Candidate Starts for Shipwreck\_41:

(Start: 3 @32117 has 44 MA's), (4, 32138), (9, 32180), (10, 32195), (15, 32291), (21, 32336),

Gene: Smooch\_22 Start: 10424, Stop: 10624, Start Num: 5

Candidate Starts for Smooch\_22:

(Start: 5 @10424 has 29 MA's), (13, 10532), (16, 10583), (18, 10601), (19, 10610),

Gene: Sonah\_39 Start: 30296, Stop: 30529, Start Num: 3

Candidate Starts for Sonah\_39:

(1, 29906), (Start: 3 @30296 has 44 MA's), (4, 30317), (8, 30356), (10, 30374), (15, 30470), (21, 30515),

Gene: StevieRay\_39 Start: 30259, Stop: 30492, Start Num: 3

Candidate Starts for StevieRay\_39:

(Start: 3 @30259 has 44 MA's), (9, 30322), (10, 30337), (15, 30433), (21, 30478),

Gene: StressBall\_39 Start: 30557, Stop: 30790, Start Num: 3

Candidate Starts for StressBall\_39:

(Start: 3 @30557 has 44 MA's), (9, 30620), (10, 30635), (15, 30731), (21, 30776),

Gene: Techage\_39 Start: 30336, Stop: 30569, Start Num: 3

Candidate Starts for Techage\_39:

(1, 29943), (Start: 3 @30336 has 44 MA's), (4, 30357), (8, 30396), (10, 30414), (15, 30510), (21, 30555),

Gene: TelAviv\_20 Start: 9875, Stop: 10087, Start Num: 5

Candidate Starts for TelAviv\_20:

(Start: 5 @9875 has 29 MA's), (13, 9983), (16, 10034), (18, 10052), (19, 10061), (22, 10076),

Gene: Thespis\_39 Start: 30293, Stop: 30526, Start Num: 3

Candidate Starts for Thespis\_39:

(1, 29903), (Start: 3 @30293 has 44 MA's), (9, 30356), (10, 30371), (15, 30467), (21, 30512),

Gene: ThulaThula\_46 Start: 34718, Stop: 34912, Start Num: 6

Candidate Starts for ThulaThula\_46:

(Start: 6 @34718 has 2 MA's), (9, 34742), (10, 34757), (12, 34802), (20, 34895), (21, 34898),

Gene: Toron\_64 Start: 41626, Stop: 41829, Start Num: 6

Candidate Starts for Toron\_64:

(Start: 6 @41626 has 2 MA's), (10, 41671), (17, 41791),

Gene: Vagabond\_21 Start: 10152, Stop: 10364, Start Num: 5

Candidate Starts for Vagabond\_21:

(Start: 5 @10152 has 29 MA's), (13, 10260), (16, 10311), (18, 10329), (19, 10338), (22, 10353),

Gene: Venti\_39 Start: 30310, Stop: 30543, Start Num: 3

Candidate Starts for Venti\_39:

(1, 29920), (Start: 3 @30310 has 44 MA's), (4, 30331), (8, 30370), (10, 30388), (15, 30484), (21, 30529),

Gene: Vidya\_39 Start: 30343, Stop: 30576, Start Num: 3  
Candidate Starts for Vidya\_39:  
(1, 29953), (Start: 3 @30343 has 44 MA's), (4, 30364), (8, 30403), (10, 30421), (15, 30517), (21, 30562),

Gene: Vorrps\_21 Start: 10109, Stop: 10321, Start Num: 5  
Candidate Starts for Vorrps\_21:  
(Start: 5 @10109 has 29 MA's), (13, 10217), (16, 10268), (18, 10286), (19, 10295), (22, 10310),

Gene: Wildflower\_21 Start: 10132, Stop: 10344, Start Num: 5  
Candidate Starts for Wildflower\_21:  
(Start: 5 @10132 has 29 MA's), (13, 10240), (16, 10291), (18, 10309), (22, 10333),

Gene: Willsammy\_38 Start: 30040, Stop: 30273, Start Num: 3  
Candidate Starts for Willsammy\_38:  
(Start: 3 @30040 has 44 MA's), (9, 30103), (10, 30118), (15, 30214), (21, 30259),

Gene: Winget\_21 Start: 10151, Stop: 10363, Start Num: 5  
Candidate Starts for Winget\_21:  
(Start: 5 @10151 has 29 MA's), (13, 10259), (16, 10310), (18, 10328), (19, 10337), (22, 10352),

Gene: Wogge42\_22 Start: 10240, Stop: 10440, Start Num: 5  
Candidate Starts for Wogge42\_22:  
(Start: 5 @10240 has 29 MA's), (13, 10348), (16, 10399), (19, 10426),

Gene: Xeno\_41 Start: 29635, Stop: 29868, Start Num: 3  
Candidate Starts for Xeno\_41:  
(1, 29245), (Start: 3 @29635 has 44 MA's), (9, 29698), (10, 29713), (15, 29809), (21, 29854),

Gene: YoyoKar\_21 Start: 9879, Stop: 10091, Start Num: 5  
Candidate Starts for YoyoKar\_21:  
(Start: 5 @9879 has 29 MA's), (13, 9987), (16, 10038), (18, 10056), (19, 10065), (22, 10080),

Gene: YungJamal\_22 Start: 10460, Stop: 10660, Start Num: 5  
Candidate Starts for YungJamal\_22:  
(Start: 5 @10460 has 29 MA's), (13, 10568), (16, 10619), (18, 10637), (19, 10646),

Gene: Zakhe101\_22 Start: 10472, Stop: 10684, Start Num: 5  
Candidate Starts for Zakhe101\_22:  
(Start: 5 @10472 has 29 MA's), (13, 10580), (16, 10631), (18, 10649), (22, 10673),

Gene: Zebo\_20 Start: 9878, Stop: 10090, Start Num: 5  
Candidate Starts for Zebo\_20:  
(Start: 5 @9878 has 29 MA's), (13, 9986), (16, 10037), (18, 10055), (19, 10064), (22, 10079),

Gene: Zilizebeth\_39 Start: 30342, Stop: 30575, Start Num: 3  
Candidate Starts for Zilizebeth\_39:  
(1, 29952), (Start: 3 @30342 has 44 MA's), (4, 30363), (8, 30402), (10, 30420), (15, 30516), (21, 30561),