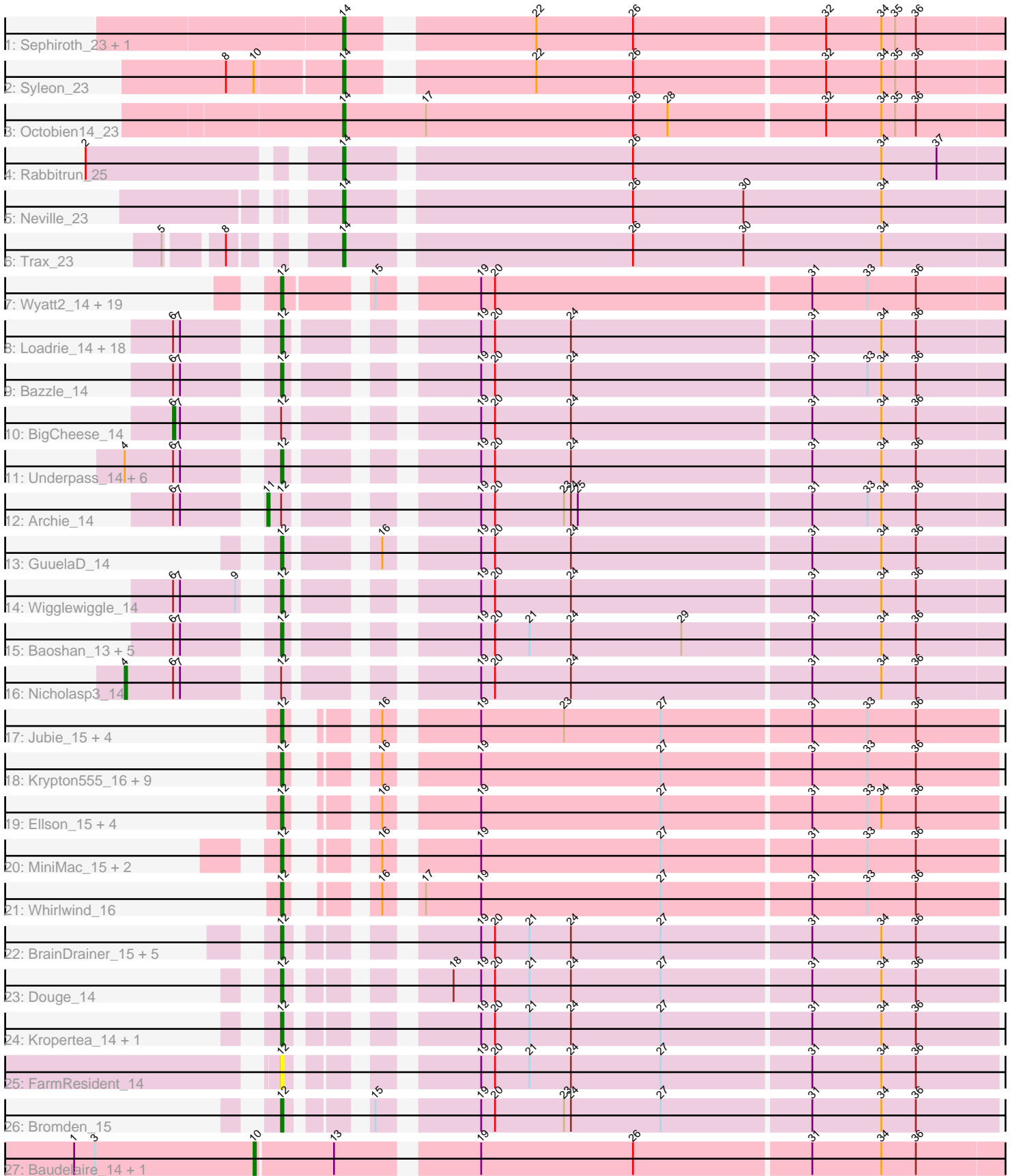


Pham 216030



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 216030 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216030 has 102 members, 25 are drafts.

Phages represented in each track:

- Track 1 : Sephiroth\_23, Kudefre\_22
- Track 2 : Syleon\_23
- Track 3 : Octobien14\_23
- Track 4 : Rabbitrun\_25
- Track 5 : Neville\_23
- Track 6 : Trax\_23
- Track 7 : Wyatt2\_14, Zaria\_14, Appletree2\_14, Silverleaf\_14, AvadaKedavra\_14, Rose5\_14, Acquire49\_14, Tyson\_14, LeBron\_14, UPIE\_14, CicholasNage\_14, Halena\_14, Enceladus\_14, JoeDirt\_14, MAckerman\_14, Poochiewood\_14, DirkDirk\_14, OhShagHennessy\_14, Wamburggrxpress\_14, Calm\_14
- Track 8 : Loadrie\_14, Sarshaun\_14, MkaliMitinis3\_14, Faith1\_15, Miley16\_14, DrSeegs\_14, Lewan\_14, Gabriela\_14, Zakai\_14, Hafay\_14, Vetrix\_14, Soap141\_14, Crossroads\_14, Itos\_14, Winky\_15, Breezona\_14, BobsGarage\_14, Rumpelstiltskin\_14, Netyap\_14
- Track 9 : Bazzle\_14
- Track 10 : BigCheese\_14
- Track 11 : Underpass\_14, LilDestine\_14, Kahlid\_14, SoJulia\_14, Finemlucis\_14, Gardann\_14, Wilder\_14
- Track 12 : Archie\_14
- Track 13 : GuuelaD\_14
- Track 14 : Wigglewiggles\_14
- Track 15 : Baoshan\_13, Tourach\_14, DanBing\_13, DHan\_14, Claus\_14, ZhongYanYuan\_13
- Track 16 : Nicholasp3\_14
- Track 17 : Jubie\_15, Finnry\_15, Moostard\_15, Bellis\_15, Samty\_15
- Track 18 : Krypton555\_16, Kingsolomon\_15, TriFive\_15, Snenia\_15, MsGreen\_15, Jobypre\_15, Nicholas\_15, Clautastrophe\_16, Red305\_15, Lumos\_15
- Track 19 : Ellson\_15, KirDoubleO7\_13, BourbonZero\_14, LiyuLake\_15, DuncansLeg\_15
- Track 20 : MiniMac\_15, Lolly9\_15, MiniLon\_15
- Track 21 : Whirlwind\_16
- Track 22 : BrainDrainer\_15, Chaser\_14, Quby\_14, Douzhi\_14, Sheng711\_14, PYPDinur\_14
- Track 23 : Douge\_14
- Track 24 : Kropertea\_14, DyoEdafos\_15
- Track 25 : FarmResident\_14
- Track 26 : Bromden\_15

- Track 27 : Baudelaire\_14, Aegeus\_14

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

The start number called the most often in the published annotations is 12, it was called in 65 of the 77 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49\_14, Appletree2\_14, AvadaKedavra\_14, Baoshan\_13, Bazzle\_14, Bellis\_15, BobsGarage\_14, BourbonZero\_14, BrainDrainer\_15, Breezona\_14, Bromden\_15, Calm\_14, Chaser\_14, CicholasNage\_14, Claus\_14, Clautastrophe\_16, Crossroads\_14, DHan\_14, DanBing\_13, DirkDirk\_14, Douge\_14, Douzhi\_14, DrSeegs\_14, DuncansLeg\_15, DyoEdafos\_15, Ellson\_15, Enceladus\_14, Faith1\_15, FarmResident\_14, Finemlucis\_14, Finnry\_15, Gabriela\_14, Gardann\_14, GuuelaD\_14, Hafay\_14, Halena\_14, Itos\_14, Jobypre\_15, JoeDirt\_14, Jubie\_15, Kahlid\_14, Kingsolomon\_15, KirDoubleO7\_13, Kropertea\_14, Krypton555\_16, LeBron\_14, Lewan\_14, LilDestine\_14, LiyuLake\_15, Loadrie\_14, Lolly9\_15, Lumos\_15, MAckerman\_14, Miley16\_14, MiniLon\_15, MiniMac\_15, MkaliMitinis3\_14, Moostard\_15, MsGreen\_15, Netyap\_14, Nicholas\_15, OhShagHennessy\_14, PYPDinur\_14, Poochiewood\_14, Quby\_14, Red305\_15, Rose5\_14, Rumpelstiltskin\_14, Samty\_15, Sarshaun\_14, Sheng711\_14, Silverleaf\_14, Snenia\_15, SoJulia\_14, Soap141\_14, Tourach\_14, TriFive\_15, Tyson\_14, UPIE\_14, Underpass\_14, Vetrix\_14, Wamburggrxpress\_14, Whirlwind\_16, Wigglewiggle\_14, Wilder\_14, Winky\_15, Wyatt2\_14, Zakai\_14, Zaria\_14, ZhongYanYuan\_13,

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

- Archie\_14, BigCheese\_14, Nicholasp3\_14,

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

- Aegeus\_14, Baudelaire\_14, Kudrefre\_22, Neville\_23, Octobien14\_23, Rabbitrun\_25, Sephiroth\_23, Syleon\_23, Trax\_23,

**Summary by start number:**

Start 4:

- Found in 8 of 102 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 1 of 77
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Nicholasp3\_14 (L2),

Start 6:

- Found in 37 of 102 ( 36.3% ) of genes in pham
- Manual Annotations of this start: 1 of 77
- Called 2.7% of time when present
- Phage (with cluster) where this start called: BigCheese\_14 (L2),

Start 10:

- Found in 3 of 102 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 2 of 77
- Called 66.7% of time when present

- Phage (with cluster) where this start called: Aegeus\_14 (L5), Baudelaire\_14 (L5),

Start 11:

- Found in 1 of 102 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Archie\_14 (L2),

Start 12:

- Found in 93 of 102 ( 91.2% ) of genes in pham
- Manual Annotations of this start: 65 of 77
- Called 96.8% of time when present
- Phage (with cluster) where this start called: Acquire49\_14 (L1), Appletree2\_14 (L1), AvadaKedavra\_14 (L1), Baoshan\_13 (L2), Bazzle\_14 (L2), Bellis\_15 (L3), BobsGarage\_14 (L2), BourbonZero\_14 (L3), BrainDrainer\_15 (L4), Breezona\_14 (L2), Bromden\_15 (L4), Calm\_14 (L1), Chaser\_14 (L4), CicholasNage\_14 (L1), Claus\_14 (L2), Clautastrophe\_16 (L3), Crossroads\_14 (L2), DHan\_14 (L2), DanBing\_13 (L2), DirkDirk\_14 (L1), Douge\_14 (L4), Douzhi\_14 (L4), DrSeegs\_14 (L2), DuncansLeg\_15 (L3), DyoEdafos\_15 (L4), Ellson\_15 (L3), Enceladus\_14 (L1), Faith1\_15 (L2), FarmResident\_14 (L4), Finemlucis\_14 (L2), Finnry\_15 (L3), Gabriela\_14 (L2), Gardann\_14 (L2), GuuelaD\_14 (L2), Hafay\_14 (L2), Halena\_14 (L1), Itos\_14 (L2), Jobypre\_15 (L3), JoeDirt\_14 (L1), Jubie\_15 (L3), Kahlid\_14 (L2), Kingsolomon\_15 (L3), KirDoubleO7\_13 (L3), Kropertea\_14 (L4), Krypton555\_16 (L3), LeBron\_14 (L1), Lewan\_14 (L2), LilDestine\_14 (L2), LiyuLake\_15 (L3), Loadrie\_14 (L2), Lolly9\_15 (L3), Lumos\_15 (L3), MAckerman\_14 (L1), Miley16\_14 (L2), MiniLon\_15 (L3), MiniMac\_15 (L3), MkaliMitinis3\_14 (L2), Moostard\_15 (L3), MsGreen\_15 (L3), Netyap\_14 (L2), Nicholas\_15 (L3), OhShagHennessy\_14 (L1), PYPDinur\_14 (L4), Poochiewood\_14 (L1), Quby\_14 (L4), Red305\_15 (L3), Rose5\_14 (L1), Rumpelstiltskin\_14 (L2), Samty\_15 (L3), Sarshaun\_14 (L2), Sheng711\_14 (L4), Silverleaf\_14 (L1), Snenia\_15 (L3), SoJulia\_14 (L2), Soap141\_14 (L2), Tourach\_14 (L2), TriFive\_15 (L3), Tyson\_14 (L1), UPIE\_14 (L1), Underpass\_14 (L2), Vetrrix\_14 (L2), Wamburggrxpress\_14 (L1), Whirlwind\_16 (L3), Wigglewiggles\_14 (L2), Wilder\_14 (L2), Winky\_15 (L2), Wyatt2\_14 (L1), Zakai\_14 (L2), Zaria\_14 (L1), ZhongYanYuan\_13 (L2),

Start 14:

- Found in 7 of 102 ( 6.9% ) of genes in pham
- Manual Annotations of this start: 7 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kudrefre\_22 (DU1), Neville\_23 (DU2), Octobien14\_23 (DU1), Rabbitrun\_25 (DU2), Sephiroth\_23 (DU1), Syleon\_23 (DU1), Trax\_23 (DU2),

### Summary by clusters:

There are 7 clusters represented in this pham: L4, L5, L2, L3, L1, DU1, DU2,

Info for manual annotations of cluster DU1:

- Start number 14 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 14 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster L1:

- Start number 12 was manually annotated 19 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 4 was manually annotated 1 time for cluster L2.
- Start number 6 was manually annotated 1 time for cluster L2.
- Start number 11 was manually annotated 1 time for cluster L2.
- Start number 12 was manually annotated 25 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 12 was manually annotated 17 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 12 was manually annotated 4 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 10 was manually annotated 2 times for cluster L5.

### **Gene Information:**

Gene: Acquire49\_14 Start: 9980, Stop: 10282, Start Num: 12

Candidate Starts for Acquire49\_14:

(Start: 12 @9980 has 65 MA's), (15, 10010), (19, 10046), (20, 10052), (31, 10187), (33, 10211), (36, 10232),

Gene: Aegeus\_14 Start: 9595, Stop: 9918, Start Num: 10

Candidate Starts for Aegeus\_14:

(1, 9517), (3, 9526), (Start: 10 @9595 has 2 MA's), (13, 9628), (19, 9682), (26, 9748), (31, 9823), (34, 9853), (36, 9868),

Gene: Appletree2\_14 Start: 9954, Stop: 10256, Start Num: 12

Candidate Starts for Appletree2\_14:

(Start: 12 @9954 has 65 MA's), (15, 9984), (19, 10020), (20, 10026), (31, 10161), (33, 10185), (36, 10206),

Gene: Archie\_14 Start: 9934, Stop: 10239, Start Num: 11

Candidate Starts for Archie\_14:

(Start: 6 @9904 has 1 MA's), (7, 9907), (Start: 11 @9934 has 1 MA's), (Start: 12 @9940 has 65 MA's), (19, 10003), (20, 10009), (23, 10039), (24, 10042), (25, 10045), (31, 10144), (33, 10168), (34, 10174), (36, 10189),

Gene: AvadaKedavra\_14 Start: 9980, Stop: 10282, Start Num: 12

Candidate Starts for AvadaKedavra\_14:

(Start: 12 @9980 has 65 MA's), (15, 10010), (19, 10046), (20, 10052), (31, 10187), (33, 10211), (36, 10232),

Gene: Baoshan\_13 Start: 9819, Stop: 10118, Start Num: 12

Candidate Starts for Baoshan\_13:

(Start: 6 @9783 has 1 MA's), (7, 9786), (Start: 12 @9819 has 65 MA's), (19, 9882), (20, 9888), (21, 9903), (24, 9921), (29, 9969), (31, 10023), (34, 10053), (36, 10068),

Gene: Baudelaire\_14 Start: 9595, Stop: 9918, Start Num: 10

Candidate Starts for Baudelaire\_14:

(1, 9517), (3, 9526), (Start: 10 @9595 has 2 MA's), (13, 9628), (19, 9682), (26, 9748), (31, 9823), (34, 9853), (36, 9868),

Gene: Bazzle\_14 Start: 9944, Stop: 10243, Start Num: 12

Candidate Starts for Bazzle\_14:

(Start: 6 @9908 has 1 MA's), (7, 9911), (Start: 12 @9944 has 65 MA's), (19, 10007), (20, 10013), (24, 10046), (31, 10148), (33, 10172), (34, 10178), (36, 10193),

Gene: Bellis\_15 Start: 10120, Stop: 10395, Start Num: 12

Candidate Starts for Bellis\_15:

(Start: 12 @10120 has 65 MA's), (16, 10141), (19, 10174), (23, 10210), (27, 10252), (31, 10315), (33, 10339), (36, 10360),

Gene: BigCheese\_14 Start: 9955, Stop: 10290, Start Num: 6

Candidate Starts for BigCheese\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: BobsGarage\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for BobsGarage\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: BourbonZero\_14 Start: 10128, Stop: 10403, Start Num: 12

Candidate Starts for BourbonZero\_14:

(Start: 12 @10128 has 65 MA's), (16, 10149), (19, 10182), (27, 10260), (31, 10323), (33, 10347), (34, 10353), (36, 10368),

Gene: BrainDrainer\_15 Start: 9803, Stop: 10084, Start Num: 12

Candidate Starts for BrainDrainer\_15:

(Start: 12 @9803 has 65 MA's), (19, 9863), (20, 9869), (21, 9884), (24, 9902), (27, 9941), (31, 10004), (34, 10034), (36, 10049),

Gene: Breezona\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Breezona\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: Bromden\_15 Start: 10127, Stop: 10408, Start Num: 12

Candidate Starts for Bromden\_15:

(Start: 12 @10127 has 65 MA's), (15, 10151), (19, 10187), (20, 10193), (23, 10223), (24, 10226), (27, 10265), (31, 10328), (34, 10358), (36, 10373),

Gene: Calm\_14 Start: 9981, Stop: 10283, Start Num: 12

Candidate Starts for Calm\_14:

(Start: 12 @9981 has 65 MA's), (15, 10011), (19, 10047), (20, 10053), (31, 10188), (33, 10212), (36, 10233),

Gene: Chaser\_14 Start: 9719, Stop: 10000, Start Num: 12

Candidate Starts for Chaser\_14:

(Start: 12 @9719 has 65 MA's), (19, 9779), (20, 9785), (21, 9800), (24, 9818), (27, 9857), (31, 9920), (34, 9950), (36, 9965),

Gene: CicholasNage\_14 Start: 9981, Stop: 10283, Start Num: 12

Candidate Starts for CicholasNage\_14:

(Start: 12 @9981 has 65 MA's), (15, 10011), (19, 10047), (20, 10053), (31, 10188), (33, 10212), (36, 10233),

Gene: Claus\_14 Start: 9999, Stop: 10298, Start Num: 12

Candidate Starts for Claus\_14:

(Start: 6 @9963 has 1 MA's), (7, 9966), (Start: 12 @9999 has 65 MA's), (19, 10062), (20, 10068), (21, 10083), (24, 10101), (29, 10149), (31, 10203), (34, 10233), (36, 10248),

Gene: Clautastrophe\_16 Start: 10124, Stop: 10399, Start Num: 12

Candidate Starts for Clautastrophe\_16:

(Start: 12 @10124 has 65 MA's), (16, 10145), (19, 10178), (27, 10256), (31, 10319), (33, 10343), (36, 10364),

Gene: Crossroads\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Crossroads\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: DHan\_14 Start: 9935, Stop: 10234, Start Num: 12

Candidate Starts for DHan\_14:

(Start: 6 @9899 has 1 MA's), (7, 9902), (Start: 12 @9935 has 65 MA's), (19, 9998), (20, 10004), (21, 10019), (24, 10037), (29, 10085), (31, 10139), (34, 10169), (36, 10184),

Gene: DanBing\_13 Start: 9818, Stop: 10117, Start Num: 12

Candidate Starts for DanBing\_13:

(Start: 6 @9782 has 1 MA's), (7, 9785), (Start: 12 @9818 has 65 MA's), (19, 9881), (20, 9887), (21, 9902), (24, 9920), (29, 9968), (31, 10022), (34, 10052), (36, 10067),

Gene: DirkDirk\_14 Start: 9982, Stop: 10284, Start Num: 12

Candidate Starts for DirkDirk\_14:

(Start: 12 @9982 has 65 MA's), (15, 10012), (19, 10048), (20, 10054), (31, 10189), (33, 10213), (36, 10234),

Gene: Douge\_14 Start: 9664, Stop: 9945, Start Num: 12

Candidate Starts for Douge\_14:

(Start: 12 @9664 has 65 MA's), (18, 9712), (19, 9724), (20, 9730), (21, 9745), (24, 9763), (27, 9802), (31, 9865), (34, 9895), (36, 9910),

Gene: Douzhi\_14 Start: 9664, Stop: 9945, Start Num: 12

Candidate Starts for Douzhi\_14:

(Start: 12 @9664 has 65 MA's), (19, 9724), (20, 9730), (21, 9745), (24, 9763), (27, 9802), (31, 9865), (34, 9895), (36, 9910),

Gene: DrSeegs\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for DrSeegs\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: DuncansLeg\_15 Start: 10130, Stop: 10405, Start Num: 12

Candidate Starts for DuncansLeg\_15:

(Start: 12 @10130 has 65 MA's), (16, 10151), (19, 10184), (27, 10262), (31, 10325), (33, 10349), (34, 10355), (36, 10370),

Gene: DyoEdafos\_15 Start: 9877, Stop: 10158, Start Num: 12

Candidate Starts for DyoEdafos\_15:

(Start: 12 @9877 has 65 MA's), (19, 9937), (20, 9943), (21, 9958), (24, 9976), (27, 10015), (31, 10078), (34, 10108), (36, 10123),

Gene: Ellson\_15 Start: 10138, Stop: 10413, Start Num: 12

Candidate Starts for Ellson\_15:

(Start: 12 @10138 has 65 MA's), (16, 10159), (19, 10192), (27, 10270), (31, 10333), (33, 10357), (34, 10363), (36, 10378),

Gene: Enceladus\_14 Start: 9983, Stop: 10285, Start Num: 12

Candidate Starts for Enceladus\_14:

(Start: 12 @9983 has 65 MA's), (15, 10013), (19, 10049), (20, 10055), (31, 10190), (33, 10214), (36, 10235),

Gene: Faith1\_15 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Faith1\_15:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: FarmResident\_14 Start: 9708, Stop: 9989, Start Num: 12

Candidate Starts for FarmResident\_14:

(Start: 12 @9708 has 65 MA's), (19, 9768), (20, 9774), (21, 9789), (24, 9807), (27, 9846), (31, 9909), (34, 9939), (36, 9954),

Gene: Finemlucis\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Finemlucis\_14:

(Start: 4 @9934 has 1 MA's), (Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: Finnry\_15 Start: 10122, Stop: 10397, Start Num: 12

Candidate Starts for Finnry\_15:

(Start: 12 @10122 has 65 MA's), (16, 10143), (19, 10176), (23, 10212), (27, 10254), (31, 10317), (33, 10341), (36, 10362),

Gene: Gabriela\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Gabriela\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: Gardann\_14 Start: 9990, Stop: 10289, Start Num: 12

Candidate Starts for Gardann\_14:

(Start: 4 @9933 has 1 MA's), (Start: 6 @9954 has 1 MA's), (7, 9957), (Start: 12 @9990 has 65 MA's), (19, 10053), (20, 10059), (24, 10092), (31, 10194), (34, 10224), (36, 10239),

Gene: GuuelaD\_14 Start: 10025, Stop: 10324, Start Num: 12

Candidate Starts for GuuelaD\_14:



(Start: 12 @10025 has 65 MA's), (16, 10055), (19, 10088), (20, 10094), (24, 10127), (31, 10229), (34, 10259), (36, 10274),

Gene: Hafay\_14 Start: 10024, Stop: 10323, Start Num: 12

Candidate Starts for Hafay\_14:

(Start: 6 @9988 has 1 MA's), (7, 9991), (Start: 12 @10024 has 65 MA's), (19, 10087), (20, 10093), (24, 10126), (31, 10228), (34, 10258), (36, 10273),

Gene: Halena\_14 Start: 9981, Stop: 10283, Start Num: 12

Candidate Starts for Halena\_14:

(Start: 12 @9981 has 65 MA's), (15, 10011), (19, 10047), (20, 10053), (31, 10188), (33, 10212), (36, 10233),

Gene: Itos\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Itos\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: Jobypre\_15 Start: 10124, Stop: 10399, Start Num: 12

Candidate Starts for Jobypre\_15:

(Start: 12 @10124 has 65 MA's), (16, 10145), (19, 10178), (27, 10256), (31, 10319), (33, 10343), (36, 10364),

Gene: JoeDirt\_14 Start: 9981, Stop: 10283, Start Num: 12

Candidate Starts for JoeDirt\_14:

(Start: 12 @9981 has 65 MA's), (15, 10011), (19, 10047), (20, 10053), (31, 10188), (33, 10212), (36, 10233),

Gene: Jubie\_15 Start: 10125, Stop: 10400, Start Num: 12

Candidate Starts for Jubie\_15:

(Start: 12 @10125 has 65 MA's), (16, 10146), (19, 10179), (23, 10215), (27, 10257), (31, 10320), (33, 10344), (36, 10365),

Gene: Kahlid\_14 Start: 9990, Stop: 10289, Start Num: 12

Candidate Starts for Kahlid\_14:

(Start: 4 @9933 has 1 MA's), (Start: 6 @9954 has 1 MA's), (7, 9957), (Start: 12 @9990 has 65 MA's), (19, 10053), (20, 10059), (24, 10092), (31, 10194), (34, 10224), (36, 10239),

Gene: Kingsolomon\_15 Start: 10124, Stop: 10399, Start Num: 12

Candidate Starts for Kingsolomon\_15:

(Start: 12 @10124 has 65 MA's), (16, 10145), (19, 10178), (27, 10256), (31, 10319), (33, 10343), (36, 10364),

Gene: KirDoubleO7\_13 Start: 10139, Stop: 10414, Start Num: 12

Candidate Starts for KirDoubleO7\_13:

(Start: 12 @10139 has 65 MA's), (16, 10160), (19, 10193), (27, 10271), (31, 10334), (33, 10358), (34, 10364), (36, 10379),

Gene: Kropertea\_14 Start: 9683, Stop: 9964, Start Num: 12

Candidate Starts for Kropertea\_14:

(Start: 12 @9683 has 65 MA's), (19, 9743), (20, 9749), (21, 9764), (24, 9782), (27, 9821), (31, 9884), (34, 9914), (36, 9929),

Gene: Krypton555\_16 Start: 10113, Stop: 10388, Start Num: 12

Candidate Starts for Krypton555\_16:

(Start: 12 @10113 has 65 MA's), (16, 10134), (19, 10167), (27, 10245), (31, 10308), (33, 10332), (36, 10353),

Gene: Kudrefre\_22 Start: 13087, Stop: 13377, Start Num: 14

Candidate Starts for Kudrefre\_22:

(Start: 14 @13087 has 7 MA's), (22, 13156), (26, 13198), (32, 13279), (34, 13303), (35, 13309), (36, 13318),

Gene: LeBron\_14 Start: 9981, Stop: 10283, Start Num: 12

Candidate Starts for LeBron\_14:

(Start: 12 @9981 has 65 MA's), (15, 10011), (19, 10047), (20, 10053), (31, 10188), (33, 10212), (36, 10233),

Gene: Lewan\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Lewan\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: LilDestine\_14 Start: 9990, Stop: 10289, Start Num: 12

Candidate Starts for LilDestine\_14:

(Start: 4 @9933 has 1 MA's), (Start: 6 @9954 has 1 MA's), (7, 9957), (Start: 12 @9990 has 65 MA's), (19, 10053), (20, 10059), (24, 10092), (31, 10194), (34, 10224), (36, 10239),

Gene: LiyuLake\_15 Start: 10130, Stop: 10405, Start Num: 12

Candidate Starts for LiyuLake\_15:

(Start: 12 @10130 has 65 MA's), (16, 10151), (19, 10184), (27, 10262), (31, 10325), (33, 10349), (34, 10355), (36, 10370),

Gene: Loadrie\_14 Start: 10023, Stop: 10322, Start Num: 12

Candidate Starts for Loadrie\_14:

(Start: 6 @9987 has 1 MA's), (7, 9990), (Start: 12 @10023 has 65 MA's), (19, 10086), (20, 10092), (24, 10125), (31, 10227), (34, 10257), (36, 10272),

Gene: Lolly9\_15 Start: 10131, Stop: 10406, Start Num: 12

Candidate Starts for Lolly9\_15:

(Start: 12 @10131 has 65 MA's), (16, 10152), (19, 10185), (27, 10263), (31, 10326), (33, 10350), (36, 10371),

Gene: Lumos\_15 Start: 10124, Stop: 10399, Start Num: 12

Candidate Starts for Lumos\_15:

(Start: 12 @10124 has 65 MA's), (16, 10145), (19, 10178), (27, 10256), (31, 10319), (33, 10343), (36, 10364),

Gene: MAckerman\_14 Start: 9980, Stop: 10282, Start Num: 12

Candidate Starts for MAckerman\_14:

(Start: 12 @9980 has 65 MA's), (15, 10010), (19, 10046), (20, 10052), (31, 10187), (33, 10211), (36, 10232),

Gene: Miley16\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Miley16\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: MiniLon\_15 Start: 10131, Stop: 10406, Start Num: 12

Candidate Starts for MiniLon\_15:

(Start: 12 @10131 has 65 MA's), (16, 10152), (19, 10185), (27, 10263), (31, 10326), (33, 10350), (36, 10371),

Gene: MiniMac\_15 Start: 10132, Stop: 10407, Start Num: 12

Candidate Starts for MiniMac\_15:

(Start: 12 @10132 has 65 MA's), (16, 10153), (19, 10186), (27, 10264), (31, 10327), (33, 10351), (36, 10372),

Gene: MkaliMitinis3\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for MkaliMitinis3\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: Moostard\_15 Start: 10121, Stop: 10396, Start Num: 12

Candidate Starts for Moostard\_15:

(Start: 12 @10121 has 65 MA's), (16, 10142), (19, 10175), (23, 10211), (27, 10253), (31, 10316), (33, 10340), (36, 10361),

Gene: MsGreen\_15 Start: 10124, Stop: 10399, Start Num: 12

Candidate Starts for MsGreen\_15:

(Start: 12 @10124 has 65 MA's), (16, 10145), (19, 10178), (27, 10256), (31, 10319), (33, 10343), (36, 10364),

Gene: Netyap\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Netyap\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: Neville\_23 Start: 14339, Stop: 14638, Start Num: 14

Candidate Starts for Neville\_23:

(Start: 14 @14339 has 7 MA's), (26, 14456), (30, 14504), (34, 14564),

Gene: Nicholas\_15 Start: 10124, Stop: 10399, Start Num: 12

Candidate Starts for Nicholas\_15:

(Start: 12 @10124 has 65 MA's), (16, 10145), (19, 10178), (27, 10256), (31, 10319), (33, 10343), (36, 10364),

Gene: Nicholasp3\_14 Start: 9933, Stop: 10289, Start Num: 4

Candidate Starts for Nicholasp3\_14:

(Start: 4 @9933 has 1 MA's), (Start: 6 @9954 has 1 MA's), (7, 9957), (Start: 12 @9990 has 65 MA's), (19, 10053), (20, 10059), (24, 10092), (31, 10194), (34, 10224), (36, 10239),

Gene: Octobien14\_23 Start: 14131, Stop: 14436, Start Num: 14

Candidate Starts for Octobien14\_23:

(Start: 14 @14131 has 7 MA's), (17, 14167), (26, 14257), (28, 14272), (32, 14338), (34, 14362), (35, 14368), (36, 14377),

Gene: OhShagHennessy\_14 Start: 9954, Stop: 10256, Start Num: 12

Candidate Starts for OhShagHennessy\_14:

(Start: 12 @9954 has 65 MA's), (15, 9984), (19, 10020), (20, 10026), (31, 10161), (33, 10185), (36, 10206),

Gene: PYPDinur\_14 Start: 9664, Stop: 9945, Start Num: 12

Candidate Starts for PYPDinur\_14:

(Start: 12 @9664 has 65 MA's), (19, 9724), (20, 9730), (21, 9745), (24, 9763), (27, 9802), (31, 9865), (34, 9895), (36, 9910),

Gene: Poochiewood\_14 Start: 9980, Stop: 10282, Start Num: 12

Candidate Starts for Poochiewood\_14:

(Start: 12 @9980 has 65 MA's), (15, 10010), (19, 10046), (20, 10052), (31, 10187), (33, 10211), (36, 10232),

Gene: Quby\_14 Start: 9663, Stop: 9944, Start Num: 12

Candidate Starts for Quby\_14:

(Start: 12 @9663 has 65 MA's), (19, 9723), (20, 9729), (21, 9744), (24, 9762), (27, 9801), (31, 9864), (34, 9894), (36, 9909),

Gene: Rabbitrun\_25 Start: 14785, Stop: 15084, Start Num: 14

Candidate Starts for Rabbitrun\_25:

(2, 14689), (Start: 14 @14785 has 7 MA's), (26, 14902), (34, 15010), (37, 15034),

Gene: Red305\_15 Start: 10124, Stop: 10399, Start Num: 12

Candidate Starts for Red305\_15:

(Start: 12 @10124 has 65 MA's), (16, 10145), (19, 10178), (27, 10256), (31, 10319), (33, 10343), (36, 10364),

Gene: Rose5\_14 Start: 9980, Stop: 10282, Start Num: 12

Candidate Starts for Rose5\_14:

(Start: 12 @9980 has 65 MA's), (15, 10010), (19, 10046), (20, 10052), (31, 10187), (33, 10211), (36, 10232),

Gene: Rumpelstiltskin\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Rumpelstiltskin\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: Samty\_15 Start: 10121, Stop: 10396, Start Num: 12

Candidate Starts for Samty\_15:

(Start: 12 @10121 has 65 MA's), (16, 10142), (19, 10175), (23, 10211), (27, 10253), (31, 10316), (33, 10340), (36, 10361),

Gene: Sarshaun\_14 Start: 10024, Stop: 10323, Start Num: 12

Candidate Starts for Sarshaun\_14:

(Start: 6 @9988 has 1 MA's), (7, 9991), (Start: 12 @10024 has 65 MA's), (19, 10087), (20, 10093), (24, 10126), (31, 10228), (34, 10258), (36, 10273),

Gene: Sephiroth\_23 Start: 13258, Stop: 13548, Start Num: 14

Candidate Starts for Sephiroth\_23:

(Start: 14 @13258 has 7 MA's), (22, 13327), (26, 13369), (32, 13450), (34, 13474), (35, 13480), (36, 13489),

Gene: Sheng711\_14 Start: 9664, Stop: 9945, Start Num: 12

Candidate Starts for Sheng711\_14:

(Start: 12 @9664 has 65 MA's), (19, 9724), (20, 9730), (21, 9745), (24, 9763), (27, 9802), (31, 9865), (34, 9895), (36, 9910),

Gene: Silverleaf\_14 Start: 9980, Stop: 10282, Start Num: 12

Candidate Starts for Silverleaf\_14:

(Start: 12 @9980 has 65 MA's), (15, 10010), (19, 10046), (20, 10052), (31, 10187), (33, 10211), (36, 10232),

Gene: Snenia\_15 Start: 10125, Stop: 10400, Start Num: 12

Candidate Starts for Snenia\_15:

(Start: 12 @10125 has 65 MA's), (16, 10146), (19, 10179), (27, 10257), (31, 10320), (33, 10344), (36, 10365),

Gene: SoJulia\_14 Start: 9990, Stop: 10289, Start Num: 12

Candidate Starts for SoJulia\_14:

(Start: 4 @9933 has 1 MA's), (Start: 6 @9954 has 1 MA's), (7, 9957), (Start: 12 @9990 has 65 MA's), (19, 10053), (20, 10059), (24, 10092), (31, 10194), (34, 10224), (36, 10239),

Gene: Soap141\_14 Start: 10024, Stop: 10323, Start Num: 12

Candidate Starts for Soap141\_14:

(Start: 6 @9988 has 1 MA's), (7, 9991), (Start: 12 @10024 has 65 MA's), (19, 10087), (20, 10093), (24, 10126), (31, 10228), (34, 10258), (36, 10273),

Gene: Syleon\_23 Start: 13180, Stop: 13470, Start Num: 14

Candidate Starts for Syleon\_23:

(8, 13132), (Start: 10 @13144 has 2 MA's), (Start: 14 @13180 has 7 MA's), (22, 13249), (26, 13291), (32, 13372), (34, 13396), (35, 13402), (36, 13411),

Gene: Tourach\_14 Start: 10006, Stop: 10305, Start Num: 12

Candidate Starts for Tourach\_14:

(Start: 6 @9970 has 1 MA's), (7, 9973), (Start: 12 @10006 has 65 MA's), (19, 10069), (20, 10075), (21, 10090), (24, 10108), (29, 10156), (31, 10210), (34, 10240), (36, 10255),

Gene: Trax\_23 Start: 14648, Stop: 14947, Start Num: 14

Candidate Starts for Trax\_23:

(5, 14594), (8, 14615), (Start: 14 @14648 has 7 MA's), (26, 14765), (30, 14813), (34, 14873),

Gene: TriFive\_15 Start: 10124, Stop: 10399, Start Num: 12

Candidate Starts for TriFive\_15:

(Start: 12 @10124 has 65 MA's), (16, 10145), (19, 10178), (27, 10256), (31, 10319), (33, 10343), (36, 10364),

Gene: Tyson\_14 Start: 9980, Stop: 10282, Start Num: 12

Candidate Starts for Tyson\_14:

(Start: 12 @9980 has 65 MA's), (15, 10010), (19, 10046), (20, 10052), (31, 10187), (33, 10211), (36, 10232),

Gene: UPIE\_14 Start: 9978, Stop: 10280, Start Num: 12

Candidate Starts for UPIE\_14:

(Start: 12 @9978 has 65 MA's), (15, 10008), (19, 10044), (20, 10050), (31, 10185), (33, 10209), (36, 10230),

Gene: Underpass\_14 Start: 9990, Stop: 10289, Start Num: 12

Candidate Starts for Underpass\_14:

(Start: 4 @9933 has 1 MA's), (Start: 6 @9954 has 1 MA's), (7, 9957), (Start: 12 @9990 has 65 MA's), (19, 10053), (20, 10059), (24, 10092), (31, 10194), (34, 10224), (36, 10239),

Gene: Vetrix\_14 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Vetrix\_14:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: Wamburgexpress\_14 Start: 9980, Stop: 10282, Start Num: 12

Candidate Starts for Wamburgexpress\_14:

(Start: 12 @9980 has 65 MA's), (15, 10010), (19, 10046), (20, 10052), (31, 10187), (33, 10211), (36, 10232),

Gene: Whirlwind\_16 Start: 10118, Stop: 10393, Start Num: 12

Candidate Starts for Whirlwind\_16:

(Start: 12 @10118 has 65 MA's), (16, 10139), (17, 10148), (19, 10172), (27, 10250), (31, 10313), (33, 10337), (36, 10358),

Gene: Wigglewigggle\_14 Start: 10023, Stop: 10322, Start Num: 12

Candidate Starts for Wigglewigggle\_14:

(Start: 6 @9987 has 1 MA's), (7, 9990), (9, 10014), (Start: 12 @10023 has 65 MA's), (19, 10086), (20, 10092), (24, 10125), (31, 10227), (34, 10257), (36, 10272),

Gene: Wilder\_14 Start: 9990, Stop: 10289, Start Num: 12

Candidate Starts for Wilder\_14:

(Start: 4 @9933 has 1 MA's), (Start: 6 @9954 has 1 MA's), (7, 9957), (Start: 12 @9990 has 65 MA's), (19, 10053), (20, 10059), (24, 10092), (31, 10194), (34, 10224), (36, 10239),

Gene: Winky\_15 Start: 9991, Stop: 10290, Start Num: 12

Candidate Starts for Winky\_15:

(Start: 6 @9955 has 1 MA's), (7, 9958), (Start: 12 @9991 has 65 MA's), (19, 10054), (20, 10060), (24, 10093), (31, 10195), (34, 10225), (36, 10240),

Gene: Wyatt2\_14 Start: 9980, Stop: 10282, Start Num: 12

Candidate Starts for Wyatt2\_14:

(Start: 12 @9980 has 65 MA's), (15, 10010), (19, 10046), (20, 10052), (31, 10187), (33, 10211), (36, 10232),

Gene: Zakai\_14 Start: 9979, Stop: 10278, Start Num: 12

Candidate Starts for Zakai\_14:

(Start: 6 @9943 has 1 MA's), (7, 9946), (Start: 12 @9979 has 65 MA's), (19, 10042), (20, 10048), (24, 10081), (31, 10183), (34, 10213), (36, 10228),

Gene: Zaria\_14 Start: 9981, Stop: 10283, Start Num: 12

Candidate Starts for Zaria\_14:

(Start: 12 @9981 has 65 MA's), (15, 10011), (19, 10047), (20, 10053), (31, 10188), (33, 10212), (36, 10233),

Gene: ZhongYanYuan\_13 Start: 9819, Stop: 10118, Start Num: 12

Candidate Starts for ZhongYanYuan\_13:

(Start: 6 @9783 has 1 MA's), (7, 9786), (Start: 12 @9819 has 65 MA's), (19, 9882), (20, 9888), (21, 9903), (24, 9921), (29, 9969), (31, 10023), (34, 10053), (36, 10068),