

1 **SUPPORTING INFORMATION**

2 The following commands were used to convert 1.0 annotation to 1.1.

3

4 ***Aligning assemblies 1.0 and 1.1***

```
5 ./lastz_32 --nogfextend --nochain --mismatch=0,100 --gapped --exact=20 --format=AXT --  
6     progress=1 --step=30 --notwins --seed=match12 --notransition --traceback=160.0M >  
7     Gaga_1To1_1align.txt
```

8

9 ***Creating a netted chain file***

```
10 samtools faidx GopAga1.0.softmasked.fa
```

```
11 samtools faidx GopAga1.1.sorted.renamed.fasta
```

12

```
13 awk -v OFS="\t" '{print $1, $2}' GopAga1.0.softmasked.fa.fai > tSizes.txt
```

```
14 awk -v OFS="\t" '{print $1, $2}' GopAga1.1.sorted.renamed.fasta.fai > qSizes.txt
```

15

```
16 ./axtToChain Gaga_1To1_1align2.txt tSizes qSizes Gaga_1To1_1align2.chain
```

```
17 ./chainMergeSort Gaga_1To1_1align4.chain > Gaga_1To1_1align4_mergesort.chain
```

18

```
19 ./chainSort Gaga_1To1_1align4.chain Gaga_1To1_1align4_sorted.chain
```

20

```
21 ./chainPreNet Gaga_1To1_1align4_sorted.chain tSizes.txt qSizes.txt
```

```
22     Gaga_1To1_1align4_sortfilt.chain -dots=500
```

23

```
24 ./chainNet Gaga_1To1_1align4_sortfilt.chain tSizes.txt qSizes.txt
```

```
25     Gaga_align4_net_target.net Gaga_align4_net_query.net
```

26

```
27 ./netChainSubset Gaga_align4_net_target.net Gaga_1To1_1align4_sortfilt.chain
```

```
28     Gaga_align4_finalchain.chain -skipMissing
```

29

30 ***Carrying over annotation from 1.0 to 1.1***

```
31 ./liftOver -gff GopAga1.0.annotation_noseqs_merged.gff Gaga_align4_finalchain.chain
```

```
32     GopAga1.1.annotation_liftover_4_netted.gff
```

```
33     GopAga1.1.annotation_liftover_4_netted_UNMAP.gff
```

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