

**Supplemental Figure S3.** Structural comparisons between palindromes in SHIMS 3.0 assemblies and existing X-Chromosome assemblies. Missing: No palindrome present in non-SHIMS 3.0 assembly. Incomplete: Part of palindrome present in non-SHIMS 3.0 assembly. Accurate: Full palindrome present in non-SHIMS 3.0 assembly. For accurate palindrome assemblies, note the presence in the square dot plot of an uninterrupted diagonal line and two arms that each map twice to the SHIMS 3.0 assembly. w=100 for all triangular and square dot plots.