## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1 Description: Passport information of whole-genome resequencing accessions in this study.

File Name: Supplementary Data 2 Description: AHG type of all 5 Mbp windows for 386 accessions in the A&B subgenomes.

File Name: Supplementary Data 3 Description: AHG type of all 5 Mbp windows for 313 accessions in D subgenomes.

File Name: Supplementary Data 4 Description: Genotype of chloroplast genome for 306 accessions.

File Name: Supplementary Data 5 Description: Windows with signature of selection detected in more than one evolutionary stages.

File Name: Supplementary Data 6 Description: Windows with signature of fixation detected.

File Name: Supplementary Data 7 Description: Frequency of presence in four taxonomic groups for 46 CEB.

File Name: Supplementary Data 8 Description: Presence and absence of the predominant AHG type around domesticationrelated and adaptation-related genes.

File Name: Supplementary Data 9 Description: centAHG type of 386 accessions for 14 A&B chromosomes.

File Name: Supplementary Data 10 Description: Inferred centAHG-3B type of additional 240 hexaploid landrace accessions.