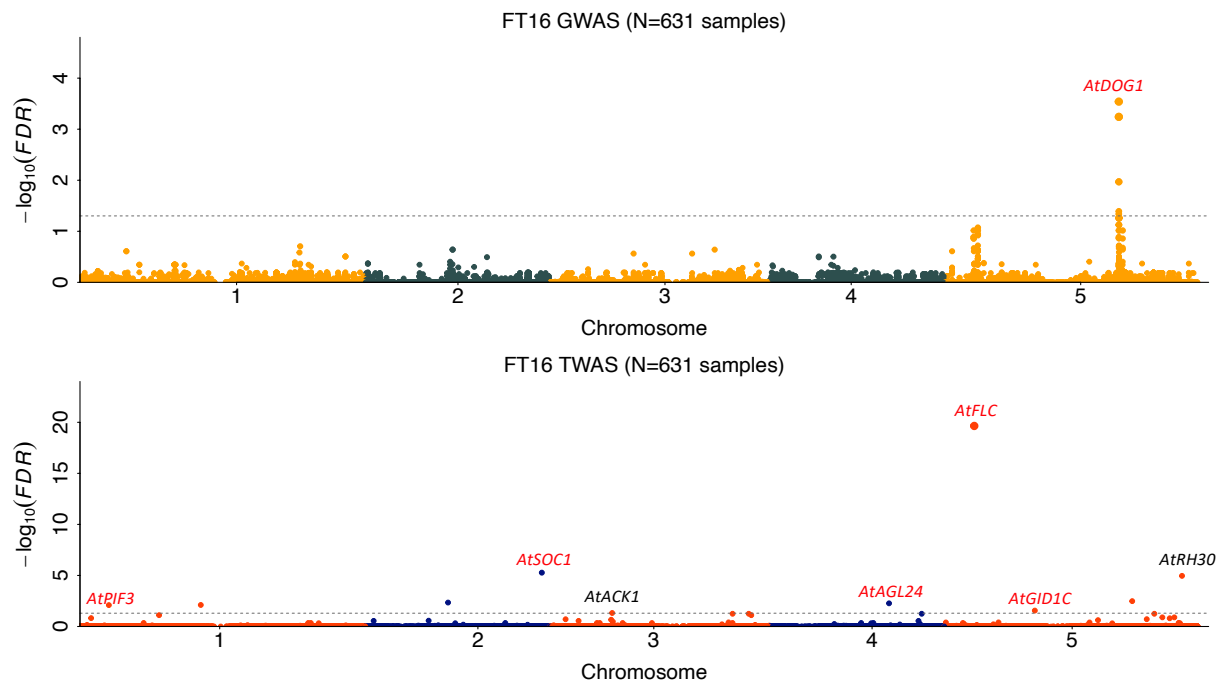
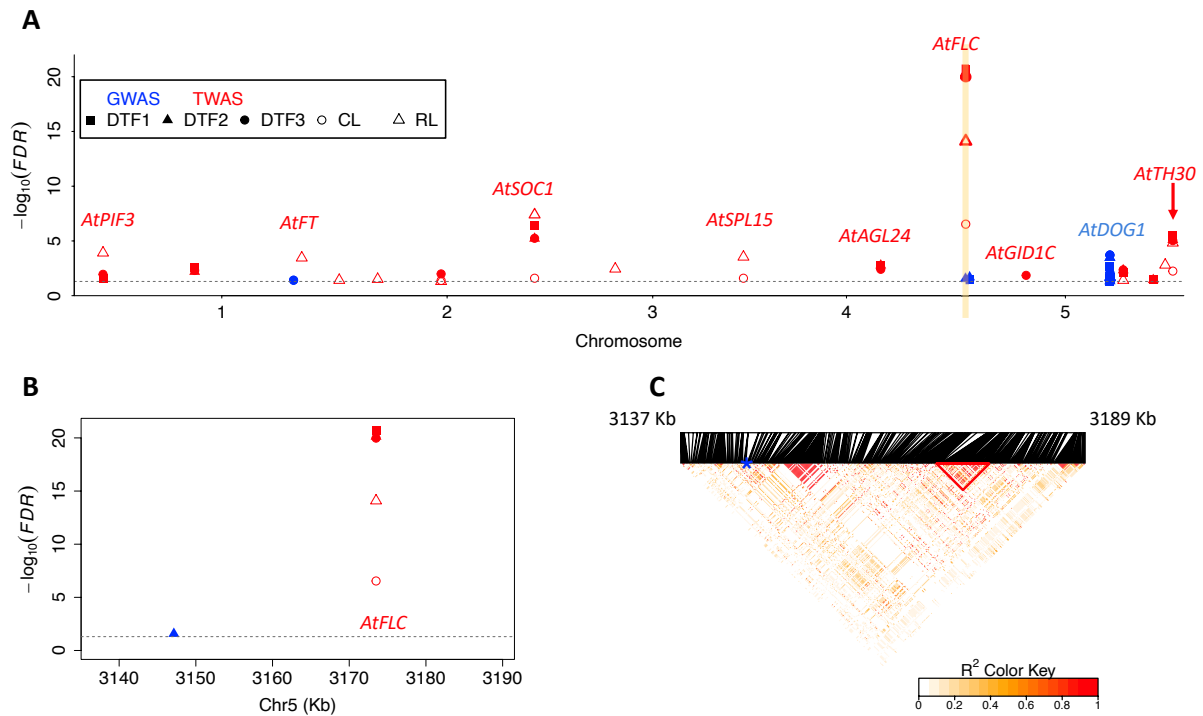


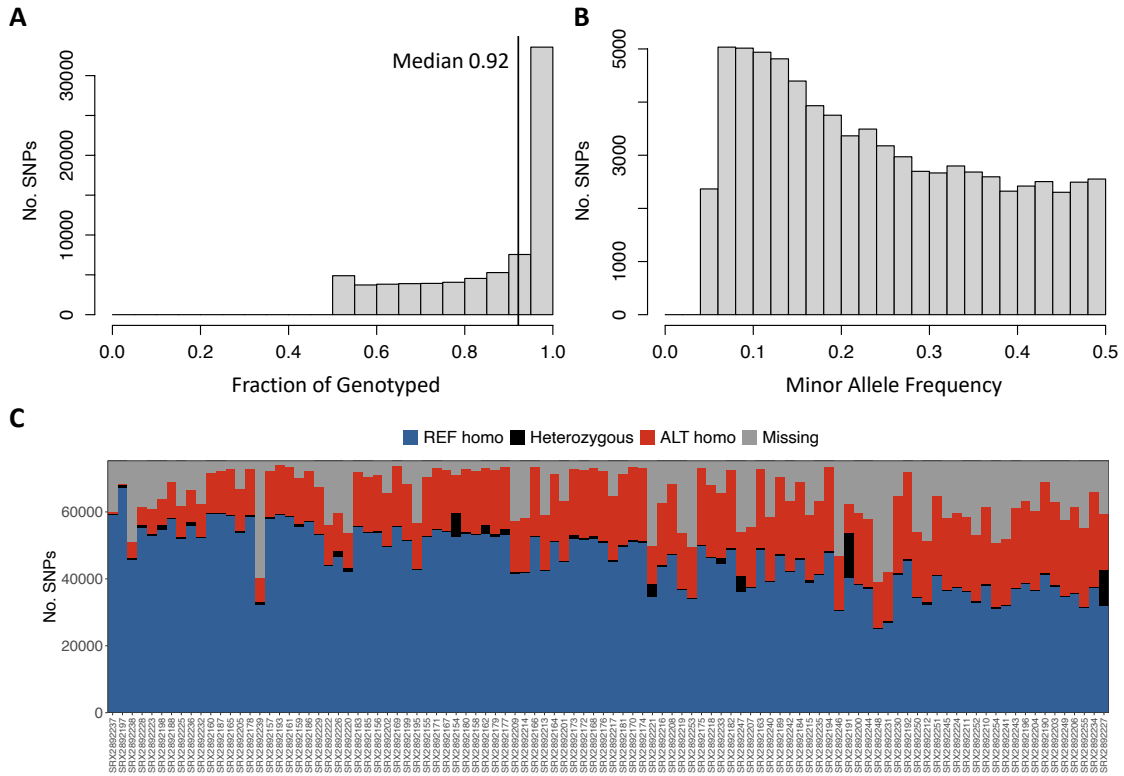
Supplemental Figure S1. Interaction network of four *Arabidopsis* flowering time genes. Regulatory relationships are summarized from the FLOR-ID database. Arrow directions indicate regulatory relationships. Indicated false discovery rate (FDR) values are from TWAS.



Supplemental Figure S2. GWAS and TWAS for *Arabidopsis* flowering time (FT16) on the subset of samples. Genotypes, expression data and phenotypes are available for all 631 samples in this subset. Manhattan plots of association studies. Each dot represents a single SNP in GWAS and a single gene in TWAS. Known trait-associated genes (in red text) and presumed trait-related genes (in black text) are indicated. Horizontal dashed lines designate the 0.05 FDR (false discovery rate) significance cutoff.



Supplemental Figure S3. GWAS and TWAS for five *Arabidopsis* developmental traits (three for flowering time and two for leaf number). (A), Manhattan plots of GWAS (blue) and TWAS (red) for the five traits (DTF1, days until emergence of visible flowering buds in the center of the rosette from time of sowing; DTF2, days until the inflorescence stem elongated to 1cm; DTF3, days until first open flower; CL, cauline leaf number; RL, rosette leaf number). Horizontal dashed lines designate the 0.05 FDR (false discovery rate) significance cutoff. Only associated SNPs from GWAS or genes from TWAS are shown. Genes with known relevant functions are labeled. The region surrounding the *AtFLC* gene (highlighted in yellow) from the GWAS and TWAS analyses are magnified in (B), showing that TWAS for multiple traits identified *AtFLC*, while GWAS identified only a single SNP, 26kb away, associated with RL. The LD (linkage disequilibrium) heatmap of that region (C) shows this RL associated SNP (marked in blue) is not within the same LD block as *AtFLC* (red triangle). The black lines in the box above represent SNPs and their physical position.



Supplemental Figure S4. Summary of soybean SNPs identified from leaf RNA-Seq data. (A), Fraction of 75,289 filtered SNPs that were genotyped. The x-axis indicates the fraction of samples with a sufficient number of covered reads to call a genotype; the y-axis indicates the number of SNPs. The black vertical line shows median value of 0.92; (B), Number of filtered SNPs with the indicated minor allele frequencies; (C), Distributions of genotypes in each sample, each bar represents one sample, x-axis shows soybean samples IDs. REF homo, reference homozygous allele; ALT homo, alternative homozygous allele.

Supplemental Table S1. Genes or loci identified via TWAS and GWAS for *Arabidopsis* flowering time and leaf number traits using data from Grimm et al., 2017.

ID ^a	Chr	Start	End	Symbols ^b	Samples	FDR ^c	Trait ^d
AT1G09530	Chr1	3076582	3079539	<i>AtPIF3</i>	620	2.44E-02	DTF1
AT1G35180	Chr1	12877107	12878719		620	2.55E-03	DTF1
AT2G45660	Chr2	18807538	18811047	<i>AtSOC1</i>	620	3.81E-07	DTF1
AT4G24540	Chr4	12670965	12674072	<i>AtAGL24</i>	620	1.74E-03	DTF1
AT5G10140	Chr5	3173497	3179448	<i>AtFLC</i>	620	1.98E-21	DTF1
AT5G49360	Chr5	20011879	20016742		620	7.57E-03	DTF1
AT5G57340	Chr5	23226086	23229282		620	3.12E-02	DTF1
AT5G63120	Chr5	25318752	25322265	<i>AtRH30</i>	620	3.15E-06	DTF1
AT1G35180	Chr1	12877107	12878719		618	6.45E-03	DTF2
AT2G45660	Chr2	18807538	18811047	<i>AtSOC1</i>	618	6.06E-06	DTF2
AT4G24540	Chr4	12670965	12674072	<i>AtAGL24</i>	618	1.70E-03	DTF2
AT5G10140	Chr5	3173497	3179448	<i>AtFLC</i>	618	7.53E-21	DTF2
AT5G49360	Chr5	20011879	20016742		618	4.66E-03	DTF2
AT5G57340	Chr5	23226086	23229282		618	3.62E-02	DTF2
AT5G63120	Chr5	25318752	25322265	<i>AtRH30</i>	618	7.93E-06	DTF2
AT1G09530	Chr1	3076582	3079539	<i>AtPIF3</i>	613	1.12E-02	DTF3
AT1G35180	Chr1	12877107	12878719		613	5.00E-03	DTF3
AT2G20440	Chr2	8810739	8813644		613	1.02E-02	DTF3
AT2G45660	Chr2	18807538	18811047	<i>AtSOC1</i>	613	5.75E-06	DTF3
AT4G24540	Chr4	12670965	12674072	<i>AtAGL24</i>	613	3.92E-03	DTF3
AT5G10140	Chr5	3173497	3179448	<i>AtFLC</i>	613	1.05E-20	DTF3
AT5G27320	Chr5	9629087	9631210	<i>AtGID1C</i>	613	1.39E-02	DTF3
AT5G49360	Chr5	20011879	20016742		613	4.35E-03	DTF3
AT5G63120	Chr5	25318752	25322265	<i>AtRH30</i>	613	9.40E-06	DTF3
AT2G20440	Chr2	8810739	8813644		604	4.08E-02	CL
AT2G45660	Chr2	18807538	18811047	<i>AtSOC1</i>	604	2.54E-02	CL
AT3G57920	Chr3	21444321	21446035	<i>AtSPL15</i>	604	2.54E-02	CL
AT5G10140	Chr5	3173497	3179448	<i>AtFLC</i>	604	2.90E-07	CL
AT5G63120	Chr5	25318752	25322265	<i>AtRH30</i>	604	5.69E-03	CL
AT1G09530	Chr1	3076582	3079539	<i>AtPIF3</i>	574	1.23E-04	RL
AT1G65480	Chr1	24331428	24333934	<i>AtFT</i>	574	3.51E-04	RL
AT1G75490	Chr1	28335502	28336706		574	3.86E-02	RL
AT2G05520	Chr2	2026162	2027117		574	3.15E-02	RL
AT2G20440	Chr2	8810739	8813644		574	4.89E-02	RL
AT2G45660	Chr2	18807538	18811047	<i>AtSOC1</i>	574	4.03E-08	RL
AT3G21950	Chr3	7734396	7736394		574	3.59E-03	RL
AT3G57920	Chr3	21444321	21446035	<i>AtSPL15</i>	574	2.91E-04	RL
AT5G10140	Chr5	3173497	3179448	<i>AtFLC</i>	574	8.16E-15	RL
AT5G49360	Chr5	20011879	20016742		574	3.86E-02	RL
AT5G60910	Chr5	24502482	24506143		574	1.57E-03	RL
AT5G63120	Chr5	25318752	25322265	<i>AtRH30</i>	574	1.51E-05	RL
S5_3586939	Chr5	3586939	3586939		620	3.57E-02	DTF1
S5_18590591	Chr5	18590247	18593973	<i>AtDOG1</i>	620	2.00E-03	DTF1
S5_18606627	Chr5	18605854	18607771		620	2.30E-02	DTF1
S5_3147133	Chr5	3147133	3147133		618	2.68E-02	DTF2
S5_3586939	Chr5	3586939	3586939		618	2.05E-02	DTF2
S5_18590501	Chr5	18590247	18593973	<i>AtDOG1</i>	618	3.29E-04	DTF2
S5_18607056	Chr5	18605854	18607771		618	2.05E-02	DTF2
S1_23453207	Chr1	23453207	23453921		613	3.87E-02	DTF3
S5_18590591	Chr5	18590247	18598332	<i>AtDOG1</i>	613	1.94E-04	DTF3
S5_18606627	Chr5	18605854	18607771		613	3.87E-02	DTF3

^a, Genes ID identified by TWAS or leading SNPs ID of loci identified by GWAS; ^b, symbols of known flowering related genes were listed; ^c, FDR (false discovery rate) of leading SNPs of loci identified by GWAS were listed; ^d, DTF1, days until emergence of visible flowering buds in the center of the rosette from time of sowing; DTF2, days until the inflorescence stem elongated to 1cm; DTF3, days until first open flower; CL, cauline leaf number; RL, rosette leaf number.

Supplemental Table S2. Summary of leaf RNA-seq data and processing and pubescence colors of component genotypes from a soybean diversity panel.

Plant ID	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Pubescence Color
PI665057	SRX2892154	255,973,378	126	252,811,220	125	207,041,114	
	SRX2892155	88,462,006	126	87,230,864	124	67,777,680	
	SRX2892156	97,496,050	126	96,181,833	124	74,126,896	
	SRX2892157	101,352,060	126	99,925,603	124	76,886,746	
	SRX2892158	105,118,408	126	103,702,536	124	81,694,195	
PI643395	SRX2892159	85,236,794	126	84,060,935	124	64,424,807	
	SRX2892160	109,721,766	126	107,841,933	124	84,343,011	
PI643146	SRX2892161	98,929,072	126	97,464,621	124	78,200,961	
PI639740	SRX2892162	292,512,022	126	288,630,285	125	237,598,560	
	SRX2892163	112,466,924	126	110,573,992	124	88,851,313	
	SRX2892164	86,472,748	126	84,970,395	124	67,387,933	
	SRX2892165	98,115,798	126	96,364,661	124	74,350,400	
PI595362	SRX2892166	104,767,366	126	103,036,496	124	81,058,267	
PI598124	SRX2892167	92,165,032	126	90,684,326	124	70,974,687	gray
	SRX2892168	107,961,764	126	105,873,376	124	89,468,567	
	SRX2892169	108,560,814	126	104,399,086	123	84,996,111	
PI639693	SRX2892170	105,677,640	126	103,627,024	124	88,595,163	
	SRX2892171	107,498,836	126	105,316,114	124	86,461,578	
	SRX2892172	88,639,108	126	87,023,569	124	70,998,498	
	SRX2892173	101,795,094	126	99,519,946	124	82,684,001	
	SRX2892174	113,228,534	126	111,165,310	124	90,764,636	
	SRX2892175	104,299,138	126	102,114,736	124	84,180,829	
	SRX2892176	82,339,610	126	80,696,415	124	66,966,231	
	SRX2892177	105,244,404	126	103,489,340	124	84,404,971	
SRX2892178	97,984,998	126	96,160,770	124	78,132,649		
PI602995	SRX2892179	108,966,310	126	106,741,854	124	83,128,871	
PI615553	SRX2892180	113,132,382	126	111,326,879	124	85,036,857	tawny
PI633730	SRX2892181	101,481,190	126	99,918,424	125	75,100,440	gray
PI633731	SRX2892182	111,742,852	126	110,226,872	125	86,207,768	gray
PI639283	SRX2892183	115,553,786	126	113,882,868	125	88,839,483	gray
PI639285	SRX2892184	74,697,254	126	73,473,684	124	56,544,974	tawny
	SRX2892185	81,252,414	126	79,698,803	124	62,915,246	
PI664025	SRX2892186	106,984,044	126	105,437,297	124	83,467,638	
PI398881	SRX2892187	102,913,138	126	101,484,365	124	79,341,521	tawny
PI427136	SRX2892188	82,766,498	126	81,539,076	124	62,946,244	tawny
PI437169B	SRX2892189	92,717,974	126	91,387,774	124	72,546,126	gray
PI507681B	SRX2892190	89,287,750	126	88,068,626	125	65,673,550	gray
PI518751	SRX2892191	141,734,412	126	139,591,246	125	112,179,831	gray
PI561370	SRX2892192	72,976,176	126	71,963,020	125	60,148,329	tawny

Plant ID	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Pubescence Color
PI404188A	SRX2892193	128,636,542	126	126,348,950	124	105,786,419	tawny
PI574486	SRX2892194	126,021,788	126	123,862,593	124	102,988,605	tawny
FC33243	SRX2892195	35,267,724	126	34,815,265	125	21,273,763	gray
PI508266	SRX2892196	36,949,010	126	36,498,708	125	30,819,113	gray
PI518671	SRX2892197	33,574,209	126	33,174,526	125	29,089,960	tawny
PI518673	SRX2892198	32,323,129	126	31,962,441	125	28,164,192	tawny
PI548298	SRX2892199	43,818,940	126	43,227,587	125	36,893,248	gray
PI548311	SRX2892200	25,225,880	126	24,950,875	125	21,921,208	tawny
PI153243	SRX2892201	34,082,180	126	33,689,873	125	27,394,606	tawny
PI157434	SRX2892202	32,187,717	126	31,849,056	125	28,102,028	tawny
PI548356	SRX2892203	29,301,256	126	28,945,016	125	25,171,934	gray
PI548360	SRX2892204	28,903,228	126	28,590,065	125	24,273,945	tawny
PI548362	SRX2892205	42,880,713	126	42,388,736	125	36,489,700	tawny
PI548378	SRX2892206	28,848,630	126	28,530,300	125	25,096,244	gray
PI548391	SRX2892207	24,683,185	126	24,387,937	125	20,544,273	gray
PI548406	SRX2892208	39,622,508	126	39,213,066	125	33,921,440	gray
PI438343	SRX2892209	28,590,400	126	28,279,718	125	23,638,606	gray
PI548477	SRX2892210	29,943,276	126	29,675,061	125	24,767,701	gray
PI548484	SRX2892211	26,014,531	126	25,754,379	125	22,755,813	gray
PI548485	SRX2892212	24,653,788	126	24,408,571	125	20,279,096	gray
PI548488	SRX2892213	28,383,203	126	28,109,542	125	23,915,238	gray
PI548493	SRX2892214	25,811,733	126	25,520,915	125	22,336,447	gray
PI548505	SRX2892215	26,770,058	126	26,442,048	125	23,312,769	gray
PI548510	SRX2892216	28,494,574	126	28,205,613	125	24,696,429	gray
PI548512	SRX2892217	31,571,101	126	31,241,960	125	26,811,621	tawny
PI548516	SRX2892218	42,621,875	126	42,239,269	125	35,067,757	gray
PI548517	SRX2892219	23,943,941	126	23,709,081	125	20,303,020	gray
PI548523	SRX2892220	22,366,748	126	22,135,761	125	18,704,380	tawny
PI548527	SRX2892221	24,911,096	126	24,646,444	125	19,582,610	tawny
PI548530	SRX2892222	22,643,466	126	22,379,240	125	18,308,708	tawny
PI548533	SRX2892223	26,126,232	126	25,788,472	125	22,076,524	tawny
PI548540	SRX2892224	26,581,871	126	26,315,683	125	21,927,530	gray
PI548542	SRX2892225	30,719,815	126	30,399,787	125	25,413,701	gray
PI548543	SRX2892226	24,481,958	126	24,267,284	125	20,630,627	tawny
PI438364	SRX2892227	29,870,734	126	29,577,532	124	24,614,398	tawny
PI548555	SRX2892228	29,675,192	126	29,362,382	125	24,791,304	tawny
PI548562	SRX2892229	40,720,401	126	40,313,194	125	34,433,248	tawny
PI548570	SRX2892230	38,838,586	126	38,369,896	125	32,366,543	gray
PI548573	SRX2892231	16,355,647	126	16,189,058	125	13,972,373	gray
PI548574	SRX2892232	31,272,756	126	30,953,198	125	25,790,005	tawny
PI548577	SRX2892233	41,471,710	126	41,032,250	125	35,369,569	gray
PI548586	SRX2892234	43,927,068	126	43,407,189	125	37,218,168	tawny

Plant ID	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Pubescence Color
PI548603	SRX2892235	45,926,930	126	45,448,017	125	35,392,301	gray
PI548628	SRX2892236	39,168,304	126	38,772,209	125	33,989,591	tawny
PI548631	SRX2892237	23,342,275	126	23,058,015	124	19,453,866	tawny
PI548632	SRX2892238	18,820,293	126	18,571,076	125	14,807,897	tawny
PI548634	SRX2892239	13,018,129	126	12,883,649	125	10,778,320	gray
PI548654	SRX2892240	29,578,196	126	29,227,497	125	24,326,177	tawny
PI548657	SRX2892241	52,875,393	126	52,138,138	125	33,713,573	gray
PI548975	SRX2892242	33,668,604	126	33,282,469	125	28,440,504	tawny
PI548980	SRX2892243	34,237,997	126	33,823,080	125	28,074,043	gray
PI548983	SRX2892244	24,384,754	126	24,050,362	124	19,214,082	tawny
PI548986	SRX2892245	35,225,863	126	34,743,749	124	25,640,598	gray
PI548987	SRX2892246	15,467,540	126	15,304,627	125	13,080,504	gray
PI548988	SRX2892247	35,222,071	126	34,772,369	124	27,529,638	gray
PI548989	SRX2892248	42,861,098	126	42,284,421	124	31,160,392	tawny
PI553039	SRX2892249	47,351,305	126	46,712,033	124	35,838,575	gray
PI553046	SRX2892250	34,791,550	126	34,255,449	124	28,666,918	gray
PI572239	SRX2892251	37,190,413	126	36,714,957	124	28,969,569	gray
PI617045	SRX2892252	33,758,225	126	33,304,555	125	25,040,740	gray
PI630984	SRX2892253	24,009,516	126	23,677,833	124	18,134,283	gray
PI641156	SRX2892254	19,759,796	126	19,457,173	124	17,419,562	tawny
PI88788	SRX2892255	24,212,254	126	23,980,996	125	20,435,647	tawny

Supplemental Table S3. Summary of seedling RNA-Seq data and processing and endosperm colors of component genotypes from a maize diversity panel.

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
04033V	SRX242938	24,005,464	100	23,269,953	96	18,317,279	
33-16	SRX242939	32,795,188	100	31,821,546	96	25,292,086	white
Nov-38	SRX242940	28,299,606	100	27,613,087	97	22,205,074	yellow
4226	SRX242934	24,722,102	100	23,832,771	96	18,802,044	yellow
4554	SRX242941	23,128,692	100	22,678,280	97	17,985,963	
4578	SRX242942	16,592,482	100	14,883,662	94	10,586,619	
4722	SRX242935	19,847,150	100	19,293,120	96	15,332,674	yellow
4F-35_BK	SRX242943	24,032,968	100	23,548,972	98	18,877,574	
52220	SRX242937	11,145,248	100	10,565,707	95	8,365,021	white
Feb-80	SRX242944	20,531,496	100	19,400,615	97	15,163,766	yellow
A	SRX242936	19,229,018	100	18,193,358	95	14,228,407	
A12	SRX242945	22,483,492	100	21,423,649	97	16,867,329	yellow
A15	SRX242946	13,120,210	100	12,651,049	97	9,650,286	yellow
A155	SRX242947	18,723,284	100	18,357,668	96	14,824,824	yellow
A171	SRX242948	16,107,794	100	15,615,558	97	12,417,976	white
A188	SRX242949	37,129,290	100	36,253,939	97	29,280,785	white
A208	SRX242950	28,903,930	100	28,147,759	96	22,794,909	yellow
A239	SRX242951	12,738,974	100	12,402,388	96	9,945,373	yellow
A258	SRX242952	32,180,286	100	31,166,668	96	24,717,113	yellow
A305	SRX242953	15,519,592	100	14,434,792	95	10,962,200	white
A321	SRX242954	12,971,370	100	12,049,706	95	8,414,165	yellow
A322	SRX242955	10,000,034	100	9,720,848	97	7,737,541	yellow
A334	SRX242956	10,041,120	100	9,672,570	96	7,531,373	yellow
A340	SRX242957	21,089,740	100	20,547,797	96	16,463,531	yellow
A374	SRX242958	18,609,684	100	17,792,165	96	14,129,588	yellow
A385	SRX242959	16,867,022	100	16,428,600	98	13,199,197	yellow
A401	SRX242960	30,027,052	100	28,932,480	96	22,956,565	yellow
A415-1-3	SRX242961	21,661,742	100	21,120,335	98	16,662,471	
A427	SRX242962	22,687,142	100	21,728,929	96	16,892,907	yellow
A554	SRX242963	24,254,718	100	23,626,607	97	19,059,578	
A572	SRX242964	12,292,198	100	11,844,100	98	9,303,229	yellow
A627	SRX242965	13,465,994	100	12,672,880	95	8,982,691	yellow
A632	SRX242966	26,927,566	100	25,914,383	95	21,347,665	yellow
A635	SRX242967	21,773,834	100	21,044,872	96	17,380,473	yellow
A648	SRX242968	18,498,528	100	17,460,007	97	13,434,569	yellow
A649	SRX242969	22,201,614	100	21,735,811	97	17,480,170	yellow
A651	SRX242970	14,770,738	100	14,318,337	98	11,392,235	yellow
A659	SRX242971	23,369,942	100	22,821,793	97	18,180,745	yellow
A661	SRX242972	22,479,808	100	21,750,995	96	17,351,165	yellow

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
A662	SRX242973	13,722,724	100	13,280,205	97	10,391,891	yellow
A663	SRX242974	30,421,220	100	29,790,543	98	24,003,641	
A673	SRX242975	17,269,606	100	16,631,986	96	13,180,348	yellow
A674	SRX242976	17,755,232	100	16,854,295	97	12,739,259	yellow
A679	SRX242977	19,808,164	100	19,220,434	96	16,152,321	
A680	SRX242978	16,318,942	100	15,639,378	96	13,061,195	yellow
A682	SRX242979	33,558,322	100	32,709,579	97	26,303,993	yellow
A71	SRX242980	17,421,386	100	16,511,326	97	12,994,397	yellow
A73	SRX242981	40,999,812	100	38,266,698	94	27,578,097	yellow
A797NW	SRX242982	30,289,272	100	29,687,079	97	23,738,152	
AR228	SRX242983	23,395,318	100	22,838,175	97	18,285,232	yellow
AS5707	SRX242984	11,576,358	100	10,982,947	96	8,440,062	
AusTRCF_306238	SRX242985	15,046,496	100	14,751,773	97	11,890,292	white
B-18	SRX242986	17,499,546	100	17,023,599	97	13,567,592	yellow
B-28	SRX242987	20,251,912	100	19,617,462	96	15,528,823	
B10	SRX242988	22,187,846	100	21,484,169	96	16,740,673	yellow
B101	SRX242989	36,495,788	100	35,475,482	96	28,725,655	yellow
B103	SRX242990	15,805,680	100	15,396,887	96	12,646,461	yellow
B104	SRX242991	19,266,072	100	18,500,209	96	15,272,534	yellow
B105	SRX242992	10,388,032	100	10,047,865	96	8,080,656	yellow
B106	SRX242993	27,549,158	100	26,696,910	96	21,349,304	yellow
B107	SRX242994	17,014,296	100	16,564,730	96	13,017,271	yellow
B108	SRX242995	27,771,418	100	24,977,464	93	18,205,117	yellow
B109	SRX242996	31,630,372	100	30,484,209	96	25,567,691	yellow
B110	SRX242997	17,238,876	100	16,387,105	96	13,234,731	
B111	SRX242998	34,751,884	100	33,264,889	95	25,125,358	
B112	SRX242999	12,499,698	100	12,167,751	96	9,901,964	
B113	SRX243000	24,451,918	100	23,440,543	96	18,027,401	
B114	SRX243001	15,800,456	100	13,983,795	91	10,407,821	
B115	SRX243002	36,183,498	100	34,056,165	94	26,661,671	yellow
B119	SRX243003	21,145,648	100	20,634,981	96	17,308,974	yellow
B120	SRX243004	18,263,788	100	17,048,887	93	11,933,296	yellow
B121	SRX243005	19,997,130	100	19,471,621	96	15,208,432	yellow
B14	SRX243006	12,287,318	100	11,730,641	97	9,383,740	yellow
B14A	SRX243007	24,540,412	100	24,034,350	97	19,891,054	yellow
B164	SRX243008	16,146,442	100	15,388,409	96	11,844,417	yellow
B2	SRX243009	21,804,788	100	21,105,824	96	16,674,085	yellow
B37	SRX243010	12,356,438	100	12,020,234	97	9,680,129	yellow
B42	SRX243011	11,243,096	100	10,984,868	97	8,732,581	yellow
B52	SRX243012	14,568,912	100	14,209,936	96	11,306,483	yellow
B54	SRX243013	30,867,502	100	30,209,187	96	23,569,320	yellow

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
B64	SRX243014	13,892,908	100	13,493,585	97	10,756,698	
B66	SRX243015	32,524,426	100	29,606,264	93	21,880,095	yellow
B68	SRX243016	17,353,392	100	16,883,812	97	13,775,674	
B7	SRX243017	22,494,644	100	21,630,000	96	17,354,500	yellow
B73	SRX243018	620,811,458	100	601,489,274	96	510,697,354	
B75	SRX243019	32,461,386	100	31,641,947	97	25,236,329	
B77	SRX243020	41,410,410	100	40,416,309	97	32,351,073	
B79	SRX243021	12,644,242	100	12,292,422	96	10,046,675	
B8	SRX243022	20,152,462	100	19,522,078	96	15,631,627	yellow
B84	SRX243023	20,755,552	100	20,324,017	97	16,812,780	
B85	SRX243024	39,107,470	100	35,363,723	94	26,522,789	
B87	SRX243025	22,215,608	100	21,237,359	94	16,112,724	yellow
B88	SRX243026	25,210,218	100	24,082,291	96	18,560,075	yellow
B90	SRX243027	14,629,338	100	13,988,159	94	10,994,262	
B91	SRX243028	12,051,256	100	11,673,980	96	8,806,164	
B97	SRX243029	23,324,670	100	22,757,660	96	18,106,411	yellow
B98	SRX243030	28,648,514	100	27,758,958	96	21,595,330	yellow
B99	SRX243031	33,349,884	100	32,601,143	96	25,847,983	yellow
C102	SRX243032	47,013,574	100	45,088,803	95	34,076,942	yellow
C103	SRX243033	15,272,326	100	14,898,236	96	12,040,302	yellow
C123	SRX243034	21,420,240	100	20,682,990	96	16,601,810	yellow
C15	SRX243035	18,549,480	100	17,963,712	96	13,984,275	
C42	SRX243036	17,148,850	100	16,447,545	95	12,194,654	yellow
C49A	SRX243037	19,810,948	100	19,319,650	96	15,629,860	yellow
C68	SRX243038	12,415,470	100	11,511,338	94	8,406,453	
CG10	SRX243039	18,848,266	100	18,312,716	96	14,768,055	yellow
CG106	SRX243040	12,998,272	100	12,512,712	96	9,874,961	
CG108	SRX243041	13,761,954	100	13,417,573	96	10,648,317	
CG65	SRX243042	16,668,124	100	16,287,804	96	13,229,901	yellow
CH157	SRX243043	18,663,844	100	17,002,560	93	12,530,388	yellow
CH701-30	SRX243044	27,640,438	100	27,032,339	97	21,515,140	yellow
CH753-4	SRX243045	11,941,816	100	11,648,299	96	9,520,873	yellow
CH9	SRX243046	23,444,830	100	22,256,995	96	17,380,169	yellow
Chi-tan_120	SRX243047	42,179,850	100	39,002,009	92	29,826,088	
CI_40H	SRX243048	14,044,714	100	13,718,822	97	11,086,108	yellow
CI187-2	SRX243049	15,136,124	100	14,807,192	96	11,951,546	yellow
CI21E	SRX243050	39,180,374	100	37,193,295	96	29,558,727	yellow
CI28A	SRX243051	13,975,786	100	13,564,716	96	10,961,249	yellow
CI31A	SRX243052	22,521,234	100	22,028,591	97	17,787,363	yellow
CI3A	SRX243053	14,697,184	100	14,332,309	96	11,609,147	yellow
CI64	SRX243054	36,636,398	100	35,178,921	96	27,922,754	white

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
CI90C	SRX243055	25,375,224	100	24,748,438	96	20,068,015	yellow
CI91B	SRX243056	15,552,462	100	15,035,171	95	12,198,652	yellow
CL17	SRX243057	20,826,096	100	20,214,388	97	16,026,882	
CL18	SRX243058	24,251,010	100	21,978,046	93	16,089,179	yellow
CL22	SRX243059	19,077,372	100	18,522,533	97	14,581,366	yellow
CL27	SRX243060	14,371,610	100	13,521,339	93	10,387,851	yellow
CM105	SRX243061	17,019,952	100	16,450,760	96	13,236,361	yellow
CM174	SRX243062	16,700,752	100	16,323,625	96	13,006,778	yellow
CM37	SRX243063	106,538,336	100	103,844,769	96	84,522,243	yellow
CM48	SRX243064	8,812,218	100	8,510,027	96	6,605,581	yellow
CM7	SRX243065	16,767,432	100	16,103,423	96	12,847,243	yellow
CM99	SRX243066	36,769,336	100	35,795,388	96	28,528,535	yellow
CML108	SRX243067	17,703,232	100	17,218,274	97	13,771,418	white
CML144	SRX243068	12,973,398	100	12,359,118	96	9,472,611	white
CML161	SRX243069	19,030,352	100	18,598,468	96	15,001,291	
CML176	SRX243070	28,645,220	100	27,513,956	97	21,806,997	white
CML197	SRX243071	10,406,702	100	10,009,097	96	7,779,851	
CML202	SRX243072	13,967,214	100	13,415,580	96	10,412,005	
CML216	SRX243073	14,567,546	100	14,157,832	97	11,207,707	
CML218	SRX243074	14,266,154	100	13,874,084	96	10,880,755	white
CML220	SRX243075	14,950,216	100	14,566,279	97	11,673,008	white
CML228	SRX243076	23,042,754	100	22,261,446	97	17,568,093	yellow
CML247	SRX243077	21,475,696	100	20,860,338	96	16,671,168	white
CML251	SRX243078	25,618,132	100	25,040,959	97	20,095,642	
CML254	SRX243079	21,341,752	100	20,723,001	96	16,908,071	white
CML264	SRX243080	26,061,104	100	25,135,117	96	19,452,538	white
CML277	SRX243081	14,482,098	100	14,000,567	96	11,149,923	white
CML287	SRX243082	31,838,856	100	29,460,818	95	22,660,499	yellow
CML312	SRX243083	9,501,776	100	9,307,314	97	7,413,869	
CML322	SRX243084	21,646,122	100	20,531,490	95	15,440,047	white
CML323	SRX243085	12,505,574	100	12,183,654	96	9,859,894	
CML376	SRX243086	15,080,634	100	14,705,209	97	11,763,962	white
CML421	SRX243087	26,010,674	100	23,933,724	94	18,292,125	
CML444	SRX243088	23,525,048	100	22,833,759	96	18,290,585	
CML448	SRX243089	11,105,770	100	10,784,416	96	8,638,905	
CML451	SRX243090	8,980,528	100	8,797,073	97	7,090,341	
CML456	SRX243091	22,355,646	100	21,383,811	96	16,990,458	
CML465	SRX243092	88,013,816	100	83,611,653	91	63,749,877	
CML488	SRX243093	17,838,186	100	17,272,031	97	13,416,068	
CML491	SRX243094	21,952,744	100	20,885,086	96	16,358,203	
CML505	SRX243095	22,970,278	100	21,901,896	92	16,967,227	

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
CML509	SRX243096	16,471,464	100	15,789,392	96	12,541,128	
CML511	SRX243097	16,120,682	100	15,776,319	96	12,781,545	
CML52	SRX243098	24,280,230	100	23,815,342	98	18,551,068	
CML91	SRX243099	22,170,670	100	21,561,067	97	16,791,608	white
CO106	SRX243100	19,397,294	100	18,892,729	96	15,279,746	yellow
CO117	SRX243101	21,845,330	100	21,283,350	96	15,766,461	yellow
CO125	SRX243102	24,253,546	100	23,678,969	96	19,164,279	yellow
CO158	SRX243103	25,223,236	100	23,099,180	93	16,899,634	yellow
CO192	SRX243104	15,109,150	100	14,381,034	96	11,057,517	yellow
CO216	SRX243105	31,784,140	100	29,718,731	93	23,045,934	yellow
CO236	SRX243106	38,059,920	100	34,769,714	91	26,571,231	yellow
CO237	SRX243107	37,638,594	100	34,750,857	92	26,522,077	yellow
CO245	SRX243108	23,999,606	100	23,433,675	97	18,343,222	yellow
CO255	SRX243109	16,745,662	100	15,868,392	96	12,167,973	yellow
CO256	SRX243110	12,314,772	100	11,532,905	93	8,748,941	yellow
CO257	SRX243111	11,368,890	100	10,999,852	96	8,791,115	yellow
CO258	SRX243112	15,281,734	100	13,932,317	92	11,098,822	yellow
CR_22	SRX243113	17,243,458	100	16,494,083	96	12,983,380	
CR1HT	SRX243114	15,123,926	100	14,429,727	97	11,258,478	yellow
CSJ3	SRX243115	15,503,330	100	14,632,638	94	11,087,172	yellow
DE3	SRX243116	38,809,274	100	37,168,385	95	28,134,183	yellow
DE4	SRX243117	20,488,066	100	19,719,009	96	15,082,480	yellow
DE811	SRX243118	22,186,712	100	21,607,699	96	17,453,133	yellow
DK4676A	SRX243119	23,335,890	100	22,194,113	95	17,525,078	
DK78371A	SRX243120	14,953,092	100	14,558,130	96	11,453,251	
DKFBHJ	SRX243121	22,430,134	100	21,927,514	96	17,712,299	
DKHBA1	SRX243122	12,408,602	100	11,834,421	95	9,104,610	
DKIB014	SRX243123	25,960,592	100	24,885,644	96	19,618,005	
DKIB02	SRX243124	117,930,516	100	107,048,851	91	76,919,144	
DKMBNA	SRX243125	13,352,170	100	12,662,018	94	9,640,798	
DKMBPM	SRX243126	11,294,820	100	10,540,724	93	8,068,893	
DKMFD-13D	SRX243127	19,804,834	100	18,337,839	93	14,482,086	
DKPB80	SRX243128	13,218,342	100	12,792,337	96	10,439,429	
E2558W	SRX243129	17,759,876	100	16,738,847	95	13,131,953	white
EAST_028	SRX243130	18,598,456	100	17,876,396	96	13,873,411	
Eng-Li_Chih	SRX243131	25,171,224	100	24,517,302	96	19,429,004	
EP1	SRX243132	17,769,072	100	16,867,353	96	13,140,256	yellow
F115	SRX243133	26,728,294	100	26,133,328	96	20,783,748	yellow
F2834T	SRX243134	12,221,778	100	11,802,775	96	8,991,977	yellow
F431	SRX243135	26,548,810	100	25,886,037	96	20,635,913	
F44	SRX243136	18,842,296	100	18,435,356	96	14,589,855	yellow

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
F7	SRX243137	26,117,798	100	25,515,164	97	20,484,037	yellow
FC46	SRX243138	47,368,860	100	46,042,072	96	35,849,752	
FR19	SRX243139	11,661,022	100	11,215,239	96	8,890,735	yellow
G22_T122	SRX243140	23,360,432	100	22,818,368	96	17,842,059	
G3_T5a	SRX243141	19,483,066	100	18,477,743	95	14,088,409	
G80	SRX243142	18,233,960	100	17,031,076	94	13,039,314	yellow
GE129	SRX243143	26,506,548	100	25,866,430	97	20,894,673	white
GE54	SRX243144	15,332,152	100	14,570,198	94	10,912,070	yellow
H110	SRX243145	23,044,018	100	22,555,501	96	18,083,886	yellow
H113	SRX243146	18,818,632	100	18,333,361	96	14,978,026	yellow
H114	SRX243147	15,895,496	100	14,709,750	93	10,838,084	yellow
H121	SRX243148	19,581,414	100	18,921,641	96	14,776,546	yellow
H122w	SRX243149	26,503,368	100	25,725,949	96	20,776,420	white
H124w	SRX243150	22,156,810	100	20,799,639	92	14,890,916	white
H14	SRX243151	23,361,520	100	22,732,143	96	18,071,269	yellow
H49	SRX243152	13,573,968	100	13,196,807	96	10,596,532	yellow
H5	SRX243153	15,089,904	100	13,896,072	95	10,464,492	yellow
H52	SRX243154	16,372,436	100	15,970,016	97	12,828,229	yellow
H71	SRX243155	28,940,070	100	27,449,925	96	20,675,378	yellow
H84	SRX243156	24,769,040	100	24,024,815	96	19,264,121	yellow
H91	SRX243157	18,982,096	100	17,767,614	95	14,051,688	yellow
H95	SRX243158	43,249,892	100	40,172,131	95	31,081,386	yellow
H96	SRX243159	14,234,826	100	13,921,148	97	11,280,046	yellow
H99	SRX243160	27,800,046	100	26,421,196	91	20,637,748	
Hi26	SRX243161	15,427,694	100	15,087,285	96	11,862,542	yellow
Hi28	SRX243162	18,896,338	100	18,420,730	96	14,695,751	yellow
HP301	SRX243163	29,366,804	100	28,077,987	96	21,763,688	
HP72-11	SRX243164	19,864,640	100	19,456,952	97	15,283,095	
HUANYAO	SRX243165	81,459,352	100	75,060,625	93	53,786,596	
HUOBAI	SRX243166	13,057,388	100	11,967,524	92	9,252,051	white
Hy	SRX243167	30,609,436	100	29,890,736	96	24,331,273	yellow
I159	SRX243168	22,586,314	100	22,066,110	96	18,014,568	yellow
I205	SRX243169	30,904,650	100	29,098,401	92	22,081,384	yellow
I29	SRX243170	28,043,004	100	27,382,593	96	21,808,498	white
Ia453	SRX243171	15,353,392	100	14,977,295	97	11,745,725	
Ia5125B	SRX243172	20,120,102	100	19,681,761	96	15,430,074	yellow
IDS28	SRX243173	32,795,238	100	31,585,933	96	24,982,399	yellow
IDS69	SRX243174	31,148,232	100	30,011,180	96	23,474,142	yellow
II101T	SRX243175	24,481,520	100	23,801,998	96	19,005,282	
II14H	SRX243176	16,986,452	100	16,476,907	96	13,109,634	white
II778d	SRX243177	13,032,136	100	12,683,234	96	10,189,556	yellow

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
INBRED_100	SRX243178	27,284,326	100	25,984,932	96	20,020,713	yellow
INBRED_109	SRX243179	91,288,954	100	85,395,412	93	65,414,262	
INBRED_141	SRX243180	18,821,764	100	16,976,862	93	12,653,872	yellow
INBRED_305	SRX243181	16,116,566	100	14,525,318	91	10,852,183	
INBRED_309	SRX243182	18,524,788	100	17,005,184	92	13,190,783	
K148	SRX243183	20,735,780	100	20,200,322	96	16,056,817	yellow
K150	SRX243184	16,765,130	100	16,005,886	95	12,408,252	yellow
K155	SRX243185	21,995,690	100	21,264,689	96	16,766,779	yellow
K201	SRX243186	24,580,476	100	23,910,665	96	18,734,621	yellow
K4	SRX243187	29,420,124	100	27,819,707	95	20,793,592	yellow
K41	SRX243188	17,542,424	100	17,168,511	96	13,711,797	white
K47	SRX243189	18,500,488	100	17,966,968	97	14,005,033	yellow
K55	SRX243190	32,000,248	100	31,209,834	96	25,075,559	white
K64	SRX243191	29,292,140	100	28,358,080	97	22,002,294	white
Ki11	SRX243192	25,397,778	100	24,491,666	96	18,991,501	
Ki21	SRX243193	13,402,274	100	13,028,788	96	10,233,114	
Ki3	SRX243194	27,783,034	100	26,617,390	97	20,988,030	
Ki43	SRX243195	18,553,702	100	17,255,248	95	13,095,644	yellow
KO679Y	SRX243196	10,363,296	100	9,930,783	95	7,604,406	
KUNG-70	SRX243197	34,480,708	100	32,020,153	93	23,353,457	
Ky21	SRX243198	15,798,186	100	15,101,053	92	11,675,450	white
Ky226	SRX243199	19,580,196	100	18,946,472	97	14,893,122	white
Ky228	SRX243200	26,288,722	100	25,797,231	97	20,687,286	
L_289	SRX243201	37,680,132	100	36,599,319	96	28,737,848	yellow
L317	SRX243202	19,680,402	100	19,062,210	97	14,837,984	yellow
LH1	SRX243203	22,699,980	100	21,614,288	96	17,100,709	yellow
LH123HT	SRX243204	11,317,922	100	10,504,449	93	7,716,108	yellow
LH143_maintainer	SRX243205	91,252,464	100	89,319,649	97	71,605,165	yellow
LH145	SRX243206	36,384,998	100	34,840,611	95	26,403,051	yellow
LH149	SRX243207	60,255,720	100	58,806,813	96	41,561,356	yellow
LH38	SRX243208	26,860,492	100	25,961,644	96	20,157,364	yellow
LH39	SRX243209	27,459,114	100	26,641,258	96	20,795,902	yellow
LH59	SRX243210	12,681,668	100	12,271,583	96	9,846,179	yellow
LH60	SRX243211	10,461,970	100	9,960,367	94	7,453,481	yellow
LH61	SRX243212	17,766,902	100	17,301,362	96	13,852,288	yellow
LH82	SRX243213	26,776,920	100	26,054,063	96	20,610,714	yellow
LH93	SRX243214	22,996,532	100	22,293,340	96	17,788,189	yellow
LP5	SRX243215	9,935,180	100	9,189,016	92	7,603,271	yellow
M14	SRX243216	13,005,832	100	12,397,721	96	9,463,830	yellow
M162W	SRX243217	19,692,202	100	19,232,505	97	15,499,548	white
M37W	SRX243218	18,823,804	100	17,700,042	95	13,619,885	white

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
MEF156-55-2	SRX243219	17,255,262	100	16,884,226	97	13,341,805	yellow
Mo15W	SRX243220	17,370,202	100	16,936,716	96	13,578,627	
Mo17	SRX243221	423,104,568	100	405,149,825	96	318,905,968	yellow
Mo23W	SRX243222	44,269,526	100	41,634,348	93	32,278,977	white
Mo24W	SRX243223	20,777,914	100	20,303,790	97	16,198,577	
Mo28W	SRX243224	16,437,646	100	16,087,999	96	13,108,024	white
Mo3	SRX243225	16,384,414	100	16,093,094	97	13,016,405	
Mo30W	SRX243226	30,426,548	100	29,341,573	96	23,609,704	white
Mo39	SRX243227	53,300,974	100	52,075,256	96	42,386,160	yellow
Mo44	SRX243228	23,882,768	100	23,340,080	96	18,658,662	yellow
Mo45	SRX243229	27,264,386	100	25,357,753	94	19,742,413	yellow
Mo47	SRX243230	28,960,174	100	28,173,213	96	22,262,261	yellow
Mo5	SRX243231	45,099,828	100	42,082,068	94	29,967,314	
Mo7	SRX243232	16,110,204	100	15,741,982	97	12,528,659	
MoG	SRX243233	16,268,384	100	15,493,073	96	11,735,108	yellow
Mp339	SRX243234	28,567,862	100	27,673,281	96	21,753,532	white
MS106	SRX243235	27,265,904	100	24,321,133	93	17,937,421	yellow
MS116	SRX243236	21,496,828	100	20,724,608	95	16,315,345	yellow
MS12	SRX243237	18,573,112	100	18,119,776	96	14,347,829	yellow
MS132	SRX243238	14,831,286	100	14,440,464	96	11,172,108	yellow
MS142	SRX243239	14,863,610	100	13,952,379	92	10,169,717	yellow
MS153	SRX243240	14,674,068	100	14,348,304	96	11,505,301	yellow
MS211	SRX243241	22,647,994	100	22,000,735	95	17,493,218	yellow
MS221	SRX243242	22,966,398	100	22,362,206	97	17,801,498	yellow
MS222	SRX243243	12,283,238	100	11,312,470	92	9,118,957	yellow
MS223	SRX243244	17,503,782	100	15,807,520	93	11,743,835	yellow
MS224	SRX243245	13,539,670	100	13,219,640	97	10,621,143	yellow
MS225	SRX243246	28,165,858	100	27,507,620	96	21,616,802	yellow
MS226	SRX243247	23,926,722	100	23,356,049	96	18,985,942	yellow
MS24A	SRX243248	10,981,916	100	10,729,922	96	8,633,806	yellow
MS67	SRX243249	20,465,210	100	20,009,102	96	16,267,016	yellow
MS72	SRX243250	17,512,454	100	17,086,443	95	13,870,916	yellow
Mt42	SRX243251	20,965,486	100	20,044,528	96	15,455,257	yellow
N193	SRX243252	25,583,528	100	24,941,373	95	19,854,631	yellow
N197	SRX243253	21,468,016	100	19,493,112	94	14,060,975	yellow
N199	SRX243254	35,545,602	100	34,710,017	97	28,068,698	
N209	SRX243255	21,999,130	100	21,431,777	96	17,639,920	yellow
N215	SRX243256	23,304,186	100	22,755,048	96	18,380,506	yellow
N216	SRX243257	21,817,228	100	21,319,791	96	16,809,914	yellow
N217	SRX243258	26,222,518	100	25,551,848	95	20,829,605	yellow
N218	SRX243259	14,932,164	100	14,609,729	95	12,261,986	yellow

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
N28	SRX243260	14,952,116	100	14,365,945	96	11,209,458	yellow
N28E	SRX243261	14,525,162	100	13,971,779	96	11,342,683	
N28Ht	SRX243262	25,170,276	100	24,376,508	96	19,854,383	yellow
N501	SRX243263	19,524,376	100	19,080,906	96	15,707,855	yellow
N527	SRX243264	42,952,878	100	41,954,083	96	34,039,485	yellow
N534	SRX243265	22,379,562	100	21,817,788	96	17,774,715	yellow
N538	SRX243266	13,016,262	100	12,692,966	96	10,058,044	yellow
N542	SRX243267	28,855,264	100	27,914,280	97	21,715,167	yellow
N545	SRX243268	21,630,780	100	21,231,789	97	17,340,976	yellow
N6	SRX243269	24,072,996	100	22,309,227	94	17,271,317	yellow
N7A	SRX243270	20,616,154	100	19,288,503	95	15,194,839	yellow
NC13	SRX243271	10,947,350	100	10,601,186	96	8,358,522	yellow
NC222	SRX243272	19,539,622	100	18,969,030	96	15,305,523	yellow
NC230	SRX243273	16,472,442	100	15,991,208	96	12,485,980	yellow
NC232	SRX243274	26,909,016	100	26,247,406	96	20,937,406	yellow
NC236	SRX243275	18,958,462	100	18,532,072	96	14,657,428	yellow
NC250	SRX243276	28,990,060	100	28,292,967	96	22,827,465	yellow
NC264	SRX243277	20,633,426	100	20,078,763	96	16,167,108	yellow
NC298	SRX243278	11,142,998	100	10,813,406	96	8,719,631	
NC318	SRX243279	26,169,336	100	25,466,861	97	20,105,769	yellow
NC340	SRX243280	20,290,596	100	19,816,746	96	15,726,595	white
NC342	SRX243281	20,657,414	100	19,310,288	95	14,668,004	yellow
NC344	SRX243282	16,801,966	100	16,003,548	96	12,107,026	yellow
NC356	SRX243283	23,182,824	100	22,669,611	97	17,779,512	
NC358	SRX243284	16,378,010	100	15,555,113	96	11,827,155	yellow
NC412	SRX243285	20,156,144	100	19,684,059	96	15,124,229	
NC472	SRX243286	24,218,378	100	23,636,113	96	19,482,139	
ND1	SRX243287	27,856,130	100	27,281,052	95	22,024,840	yellow
ND101	SRX243288	15,092,660	100	14,632,914	95	11,524,968	
ND167	SRX243289	20,677,068	100	19,821,710	96	15,764,368	yellow
ND230	SRX243290	21,080,088	100	20,648,412	96	16,418,255	yellow
ND245	SRX243291	22,621,014	100	22,061,930	95	17,753,729	yellow
ND246	SRX243292	37,042,254	100	34,733,104	95	27,244,458	yellow
ND247	SRX243293	11,159,102	100	10,814,798	96	8,616,034	yellow
ND251	SRX243294	17,278,066	100	16,809,819	95	13,657,975	yellow
ND260	SRX243295	16,011,528	100	15,654,134	95	12,463,804	yellow
ND262	SRX243296	35,043,884	100	34,029,499	97	27,101,316	yellow
ND265	SRX243297	21,831,498	100	20,840,201	96	16,125,383	
ND283	SRX243298	16,985,198	100	16,563,863	96	13,002,014	yellow
NK740	SRX243299	13,211,132	100	12,696,973	96	9,850,352	
NKH8431	SRX243300	18,882,860	100	18,432,994	95	15,238,514	

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
NKS8324	SRX243301	20,992,188	100	20,172,003	95	16,042,254	
NO_380	SRX243302	18,353,686	100	17,887,343	95	14,375,106	
NP87	SRX243303	39,181,534	100	38,112,802	96	30,323,579	
NY_159_Nevah_Yaar	SRX243304	40,723,356	100	39,540,778	95	32,023,799	
NY6371	SRX243305	32,266,768	100	30,356,636	95	23,456,195	
OC19	SRX243306	14,670,530	100	14,046,004	96	11,183,755	yellow
OH33	SRX243307	16,198,268	100	15,838,531	96	12,590,035	yellow
Oh40B	SRX243308	17,418,286	100	16,701,704	97	12,910,037	yellow
Oh43	SRX242933	153,949,626	50	152,276,584	50	104,013,146	yellow
Oh7	SRX243309	19,917,018	100	19,015,742	96	15,011,846	yellow
Oh7B	SRX243310	23,144,294	100	22,567,460	96	18,299,747	
Os420	SRX243311	18,767,492	100	18,248,962	96	14,609,795	yellow
Os426	SRX243312	18,760,922	100	18,278,177	95	14,528,381	yellow
P39	SRX243313	14,846,640	100	14,481,354	97	11,350,445	yellow
Pa392	SRX243314	20,351,928	100	19,890,794	96	16,369,072	yellow
Pa405	SRX243315	27,125,298	100	26,081,730	95	20,823,972	yellow
Pa468	SRX243316	16,511,022	100	16,153,529	97	12,640,429	yellow
Pa762	SRX243317	17,774,018	100	16,689,694	95	13,080,103	yellow
Pa778	SRX243318	122,909,110	100	114,519,877	94	89,841,913	yellow
Pa880	SRX243319	22,079,778	100	21,571,119	97	17,489,963	yellow
Pa891	SRX243320	14,202,060	100	13,781,537	96	10,688,041	yellow
PHB09	SRX243321	19,988,480	100	19,538,275	96	16,132,634	
PHG29	SRX243322	16,679,912	100	16,186,247	98	12,879,253	yellow
PHG35	SRX243323	27,217,860	100	26,581,975	95	21,618,675	yellow
PHG39	SRX243324	17,994,000	100	17,565,794	96	13,874,174	yellow
PHG47	SRX243325	16,034,368	100	15,637,676	97	12,402,706	yellow
PHG50	SRX243326	16,605,588	100	16,262,805	97	12,855,667	yellow
PHG72	SRX243327	33,097,364	100	32,360,530	96	26,575,847	yellow
PHG80	SRX243328	26,789,892	100	26,146,114	96	21,323,737	
PHJ40	SRX243329	14,986,578	100	13,488,841	94	10,108,105	yellow
PHK76	SRX243330	18,840,524	100	18,294,123	96	14,244,663	
PHN11	SRX243331	16,523,276	100	15,828,299	96	12,336,403	yellow
PHR36	SRX243332	18,173,904	100	17,664,926	95	14,218,324	white
PHT55	SRX243333	16,179,898	100	15,769,671	96	12,431,860	yellow
PHT77	SRX243334	16,354,664	100	15,906,634	96	12,572,686	yellow
PHV63	SRX243335	16,962,962	100	16,617,404	97	13,552,278	white
PHW17	SRX243336	39,051,520	100	37,707,503	96	31,005,589	white
PHZ51	SRX243337	21,097,802	100	20,291,510	95	15,854,430	yellow
R101	SRX243338	21,368,414	100	20,905,049	96	16,833,354	yellow
R113	SRX243339	21,806,256	100	21,282,760	96	17,318,312	yellow
R134	SRX243340	31,301,248	100	30,603,610	96	24,912,304	yellow

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
R168	SRX243341	18,194,224	100	17,712,839	97	13,930,771	yellow
R177	SRX243342	19,660,696	100	19,171,635	96	15,201,827	yellow
R181B	SRX243343	14,667,890	100	14,242,821	96	11,273,891	yellow
R197	SRX243344	16,136,306	100	15,699,062	97	12,406,927	yellow
R225	SRX243345	19,896,148	100	19,501,472	97	15,797,391	
R226	SRX243346	11,150,330	100	10,894,334	97	8,566,130	
R227	SRX243347	18,050,616	100	17,569,607	95	14,559,587	
R229	SRX243348	22,799,462	100	22,323,308	97	18,891,766	yellow
R30	SRX243349	19,607,286	100	19,125,756	96	15,045,280	white
R4	SRX243350	15,715,192	100	14,689,396	96	11,141,867	yellow
R53	SRX243351	19,073,796	100	18,510,210	96	14,808,464	yellow
R71	SRX243352	8,188,664	100	7,953,720	96	6,371,577	
R78	SRX243353	17,892,902	100	16,920,623	95	13,152,564	yellow
S_56	SRX243354	32,924,030	100	32,251,906	97	25,707,634	
SD101	SRX243355	17,510,800	100	17,081,669	96	13,826,743	yellow
SD102	SRX243356	24,790,336	100	23,666,139	95	18,393,451	yellow
SD107	SRX243357	11,344,434	100	11,014,816	96	8,835,449	
SD15	SRX243358	22,316,686	100	21,501,768	97	17,152,167	yellow
SD40	SRX243359	19,235,452	100	18,561,498	97	14,835,496	yellow
SD42	SRX243360	16,684,960	100	16,193,849	96	13,005,457	
SD44	SRX243361	17,814,422	100	17,403,650	97	13,863,095	yellow
SG_30A	SRX243362	18,416,184	100	17,329,544	95	13,446,734	yellow
Sg1533	SRX243363	34,010,034	100	32,298,921	95	23,875,098	
Sg18	SRX243364	30,765,452	100	29,252,346	96	23,203,604	yellow
T141	SRX243365	21,225,756	100	20,720,538	96	16,505,681	
T146	SRX243366	23,747,826	100	22,784,852	96	17,693,979	
T232	SRX243367	20,423,044	100	19,962,614	97	16,371,992	yellow
T234	SRX243368	16,980,546	100	16,659,049	97	13,186,942	yellow
T242	SRX243369	39,717,934	100	38,507,080	97	30,756,981	
T9	SRX243370	25,685,584	100	24,851,156	96	19,898,500	
Tr	SRX243371	19,448,170	100	18,984,576	96	15,147,215	yellow
Tx303	SRX243372	20,166,984	100	19,483,131	96	15,396,105	yellow
TZU-CHIAO-HSI-WU_105	SRX243373	20,103,584	100	19,377,127	96	15,069,056	
U_123	SRX243374	14,449,710	100	13,825,831	96	10,729,741	
U267Y	SRX243375	23,509,072	100	22,903,684	97	18,375,143	yellow
Va102	SRX243376	16,312,280	100	15,878,289	97	12,451,864	yellow
Va14	SRX243377	14,844,966	100	14,468,789	97	11,739,642	yellow
Va38	SRX243378	24,709,252	100	24,008,458	96	19,032,474	
Va52	SRX243379	16,401,656	100	15,979,147	96	12,714,450	
Va85	SRX243380	12,956,560	100	12,433,820	96	9,558,657	yellow
Va99	SRX243381	19,623,090	100	19,058,777	96	15,050,539	yellow

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VaW6	SRX243382	25,685,590	100	24,745,262	96	19,783,124	yellow
W_7151	SRX243383	12,230,808	100	11,931,010	97	9,492,586	yellow
W117Ht	SRX243384	21,187,400	100	20,391,856	97	15,799,554	yellow
W153R	SRX243385	17,162,528	100	16,788,967	97	13,756,651	yellow
W182BN	SRX243386	26,155,852	100	25,549,084	97	20,434,763	yellow
W22	SRX243387	18,135,112	100	17,194,675	96	13,377,221	yellow
W23	SRX243388	18,738,772	100	17,548,137	96	13,425,503	yellow
W24	SRX243389	24,226,692	100	23,650,036	97	19,243,296	yellow
W32	SRX243390	23,862,044	100	23,244,760	96	18,822,802	yellow
W37A	SRX243391	26,447,194	100	25,496,290	96	19,699,071	yellow
W552	SRX243392	25,878,658	100	25,189,520	96	20,272,148	yellow
W59E	SRX243393	21,452,024	100	21,030,625	97	16,800,354	yellow
W601S	SRX243394	19,310,090	100	18,575,150	97	14,412,127	
W603S	SRX243395	54,405,164	100	51,718,819	95	40,127,164	
W604S	SRX243396	20,040,578	100	19,532,700	97	15,703,182	yellow
W605S	SRX243397	58,012,122	100	56,659,231	97	44,580,234	yellow
W606S	SRX243398	21,532,304	100	20,582,667	96	16,458,360	
W607S	SRX243399	22,576,380	100	22,125,570	97	17,713,679	
W608S	SRX243400	32,228,122	100	31,131,173	96	24,911,614	
W609S	SRX243401	14,241,712	100	13,881,362	97	11,050,111	
W610S	SRX243402	24,922,080	100	24,306,220	96	19,984,434	
W611S	SRX243403	36,432,166	100	35,406,751	97	27,782,223	
W612S	SRX243404	9,780,516	100	9,438,785	96	7,409,098	
W64A	SRX243405	20,183,626	100	19,268,486	97	15,071,157	yellow
W701BC	SRX243406	16,780,446	100	16,306,972	96	12,993,827	
W703	SRX243407	9,657,608	100	9,374,225	97	7,314,152	yellow
W802G	SRX243408	19,676,058	100	19,048,019	96	15,283,492	white
W803G	SRX243409	21,694,494	100	21,193,998	96	17,226,607	yellow
W809G	SRX243410	12,740,278	100	12,198,684	96	9,896,891	yellow
W810G	SRX243411	28,488,940	100	27,889,769	97	22,471,196	yellow
W811G	SRX243412	25,194,950	100	24,697,789	97	20,725,541	yellow
W812G	SRX243413	30,432,974	100	29,654,637	97	24,089,527	yellow
W813G	SRX243414	19,051,986	100	18,622,053	96	15,257,693	yellow
W814G	SRX243415	21,902,840	100	21,375,069	96	17,435,746	yellow
W815G	SRX243416	17,473,424	100	17,010,709	97	13,463,566	
W816G	SRX243417	19,070,126	100	18,341,053	96	14,479,341	yellow
W817G	SRX243418	14,696,452	100	14,335,172	96	11,471,802	yellow
W818G	SRX243419	23,292,578	100	22,821,568	97	18,961,940	
W819G	SRX243420	23,497,822	100	22,912,370	96	19,179,503	yellow
W820G	SRX243421	23,477,036	100	22,948,908	97	19,044,454	yellow
W821G	SRX243422	34,838,438	100	34,064,605	97	26,673,666	yellow

Name	Experiment	Raw Reads	Raw Length (bp)	Trimmed Reads	Trimmed Length (bp)	Uniquely Aligned Reads	Endosperm Color
W85	SRX243423	23,100,570	100	22,647,333	97	18,275,706	
W9	SRX243424	17,887,614	100	17,451,668	97	13,879,754	yellow
WD	SRX243425	25,661,530	100	24,094,688	95	18,454,622	yellow
WR3	SRX243426	9,345,750	100	9,149,437	97	7,314,991	yellow
WU-TAN-TZAO	SRX243427	27,905,224	100	27,191,399	96	21,546,256	
WXB6	SRX243428	28,369,512	100	26,731,384	95	20,765,371	yellow
YANG	SRX243429	43,317,500	100	42,175,452	97	33,667,263	
YE_4	SRX243430	11,800,266	100	11,491,635	96	9,292,756	
YE-CHI-HUNG	SRX243431	22,905,440	100	22,360,636	97	17,572,472	
yellow_3-4	SRX243432	18,411,860	100	18,038,667	97	14,446,223	
YING-55	SRX243433	40,187,372	100	39,230,468	97	31,092,851	
YONG_28	SRX243434	34,661,122	100	33,919,234	97	26,932,001	white
Yu796_NS	SRX243435	16,050,986	100	15,686,027	97	12,354,447	yellow

Supplemental Table S4. Numbers of genes expressed in seven tissues of a maize diversity panel and the frequencies of yellow and white endosperm phenotypes in subsets of this panel.

Maize Tissue	Expressed Genes	Samples	Endosperm White	Endosperm Yellow
Root	24,517	273	55	156
Shoot	24,362	278	61	159
Kernels	23,855	230	41	147
Leaf Base	24,020	263	59	154
Leaf Tip	24,248	265	60	156
Leaf-Day	24,054	203	48	112
Leaf-Night	23,996	261	50	161

Note: Some of samples have no endosperm phenotype available.

Supplemental Table S5. DTA-associated maize genes identified via TWAS using expression data from seven tissues.

ID	Chr.	Start	End	P-value	Samples	Tissue	Know Gene
<i>GRMZM2G171650</i>	3	159022119	159050063	2.44E-06	248	Root	<i>ZmMADS69</i>
<i>GRMZM2G117012</i>	5	69463587	69464815	8.18E-05	248	Root	
<i>GRMZM2G430526</i>	5	162738444	162743510	4.14E-05	248	Root	
<i>GRMZM2G457415</i>	9	34843533	34862015	4.71E-05	248	Root	
<i>GRMZM2G317262</i>	9	133838161	133839932	4.59E-05	248	Root	
<i>GRMZM2G089421</i>	9	152399689	152401927	2.78E-05	248	Root	
<i>GRMZM2G419024</i>	1	201439240	201445286	9.01E-05	258	Shoot	
<i>GRMZM2G171650</i>	3	159022119	159050063	2.27E-05	258	Shoot	<i>ZmMADS69</i>
<i>GRMZM2G338693</i>	5	17212985	17288687	8.48E-05	258	Shoot	
<i>GRMZM2G430526</i>	5	162738444	162743510	5.42E-05	258	Shoot	
<i>GRMZM2G116517</i>	7	116399077	116402985	8.99E-05	258	Shoot	
<i>GRMZM2G700665</i>	8	131576889	131580316	6.02E-05	258	Shoot	<i>ZmRap2.7</i>
<i>GRMZM2G171650</i>	3	159022119	159050063	2.83E-06	220	Kernels	<i>ZmMADS69</i>
<i>GRMZM2G026881</i>	5	50479549	50481319	9.08E-05	220	Kernels	
<i>GRMZM2G410152</i>	9	51770330	51771142	1.27E-06	220	Kernels	
<i>GRMZM2G097277</i>	2	218318696	218325243	6.11E-05	251	Leaf Base	
<i>GRMZM2G430526</i>	5	162738444	162743510	4.99E-05	251	Leaf Base	
<i>GRMZM2G088088</i>	8	82956568	82961691	4.69E-05	251	Leaf Base	
<i>GRMZM2G007426</i>	9	124845545	124847059	7.70E-05	251	Leaf Base	
<i>GRMZM2G052206</i>	1	59594490	59600500	5.99E-05	253	Leaf Tip	
<i>GRMZM2G132000</i>	2	145653086	145656777	7.13E-05	253	Leaf Tip	
<i>GRMZM2G157631</i>	8	121588442	121592758	7.14E-05	253	Leaf Tip	
<i>GRMZM2G179264</i>	8	123030387	123032175	3.34E-06	253	Leaf Tip	<i>ZCN8</i>
<i>GRMZM2G700665</i>	8	131576889	131580316	2.32E-05	253	Leaf Tip	<i>ZmRap2.7</i>
<i>GRMZM2G125494</i>	2	15582030	15592514	6.21E-05	191	Leaf-Day	
<i>GRMZM2G103666</i>	3	197706353	197708239	1.75E-05	191	Leaf-Day	<i>ZCN12</i>
<i>GRMZM2G305154</i>	3	134745438	134748098	3.25E-05	248	Leaf-Night	
<i>GRMZM2G020920</i>	4	49111485	49155166	1.22E-05	248	Leaf-Night	
<i>GRMZM2G427369</i>	5	210013736	210020221	3.85E-05	248	Leaf-Night	

Supplemental Table S6. Carotenoid-associated maize genes identified via TWAS using expression data from maize seedling.

ID	Chr.	Start	End	P-value	Samples	Trait	Annotation
<i>GRMZM2G087207</i>	1	4011889	4016576	4.76E-05	104	Phytofluene	Hydroxymethylglutaryl-CoA synthase / HMG-CoA synthase / 3-hydroxy-3-methylglutaryl coenzyme A synthase.
<i>GRMZM2G013430</i>	1	24049836	24051294	6.34E-05	104	ζ-Carotene	Serine acetyltransferase.
<i>GRMZM2G143202</i>	1	86848122	86858514	5.03E-06	104	Zeinoxanthin/Lutein	Cytochrome P450 superfamily protein.
<i>GRMZM5G886989</i>	2	65370210	65379554	9.61E-05	105	Provitamin A/Total Carotenoids	Transport protein particle (TRAPP) component.
<i>GRMZM2G013357</i>	2	86876029	86881956	3.30E-05	105	β-Cryptoxanthin/ Zeaxanthin	Cytochrome P450, family 81, subfamily D, polypeptide 5.
<i>GRMZM2G013357</i>	2	86876029	86881956	5.97E-05	104	Provitamin A	Cytochrome P450, family 81, subfamily D, polypeptide 5.
<i>GRMZM2G131912</i>	2	110205319	110210845	7.08E-05	105	β-Cryptoxanthin /Zeaxanthin	Pectin lyase-like superfamily protein.
<i>GRMZM2G047292</i>	2	139818315	139820635	7.83E-05	105	α-Carotene	Seed imbibition 2.
<i>GRMZM2G178533</i>	3	179689569	179692060	8.91E-05	104	Zeinoxanthin/Lutein	NAD(P)-linked oxidoreductase superfamily protein.
<i>GRMZM2G085573</i>	4	60197640	60203583	8.64E-05	104	ζ-Carotene	Calcium-binding EF-hand family protein.
<i>GRMZM2G145718</i>	6	59028977	59033586	5.77E-05	105	Lutein	
<i>GRMZM2G145718</i>	6	59028977	59033586	7.16E-05	105	Total a-Xanthophylls	
<i>GRMZM2G037882</i>	7	29406258	29409357	5.94E-05	102	Total b-Xanthophylls	F-box/RNI-like/FBD-like domains-containing protein.
<i>GRMZM2G037882</i>	7	29406258	29409357	8.90E-05	102	Zeaxanthin	F-box/RNI-like/FBD-like domains-containing protein.
<i>GRMZM5G822440</i>	7	157496168	157498257	4.35E-05	104	Acyclic and Monocyclic Carotenes	ARM repeat superfamily protein.
<i>GRMZM2G406603</i>	9	88263061	88268115	5.91E-05	105	Total Carotenoids	Fatty acyl-ACP thioesterases B.
<i>GRMZM2G393742</i>	10	83551464	83557118	3.13E-05	105	α-Carotene	SNF2 domain-containing protein / helicase domain-containing protein.
<i>GRMZM2G029039</i>	10	142218302	142221256	7.23E-05	102	β-Xanthophylls/α-Xanthophylls	Galactose oxidase/kelch repeat superfamily protein.
<i>GRMZM2G117531</i>	10	144548085	144553572	8.77E-05	105	Total Carotenoids	Alpha/beta-Hydrolases superfamily protein.

Supplemental Table S7. Data used.

Species	Genotype (No. Samples)	Expression (No. Samples)	Phenotypes	Subject Samples*
<i>Arabidopsis</i>	Re-Sequencing of 1,135 accessions ^a	Rosettes leaves (727) ^b	Flowering time traits ^{a,c}	613-690
			Leaf number traits ^c	574-604
Soybean	Leaves (N=102) ^d		Pubescence color ^e	75
Maize	-	Whole seedlings (503) ^f	Carotenoid traits ^g	102-105
	-	7 Tissues (~255) ^h	Endosperm color ^e	203-278
			Days to anthesis ⁱ	191-258

*, Subject Samples, samples having phenotypes and expression data were used for subsequent association analyses; ^a, Alonso-Blanco et al., 2016; ^b, Kawakatsu et al., 2016; ^c, Grimm et al., 2017; ^d, El Baidouri et al., 2018 and SRP108748; ^e, U.S. National Plant Germplasm System; ^f, Hirsch et al., 2014; ^g, Owens et al., 2014; ^h, Kremling et al., 2018; ⁱ, Peiffer et al., 2014.