Supplementary Information

Extreme Surface Incident Solar Radiation over China: Observations, ERA5, and MERRA-2

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Table S1, Figure S1 and S2

Table S1 Trends in annual mean surface incident solar radiations (R_s; units: $W \cdot m^{-2} \cdot decade^{-1}$) and in the frequency (units: $days \cdot decade^{-1}$) and magnitude (units: $W \cdot m^{-2} \cdot decade^{-1}$) of extremely low ($R_s10p$) and high ($R_s90p$) R_s events derived from raw (Raw) and homogenized (Homo) observations in China during 1961–1979, 1980–1993, and 1994–2016. Bold and italic denote significance at the 0.05 and 0.10 levels, respectively.

		Raw	Homo
R_s	1961–1979	**-6.87**	**-4.74**
	1980–1993	-0.40	-1.31
	1994–2016	**2.13**	0.97
R_s90p frequency	1961–1979	**-22.48**	**-18.31**
	1980–1993	-0.82	*-5.00*
	1994–2016	**9.21**	**6.65**
R_s90p magnitude	1961–1979	2.03	-0.26
	1980–1993	**10.25**	**13.35**
	1994–2016	1.28	1.52
R_s10p frequency	1961–1979	1.89	-1.15
	1980–1993	**2.79**	**5.26**
	1994–2016	**1.92**	-0.84
R_s10p magnitude	1961–1979	-1.06	-0.07
	1980–1993	*-1.66*	**-3.70**
	1994–2016	**0.98**	**1.37**

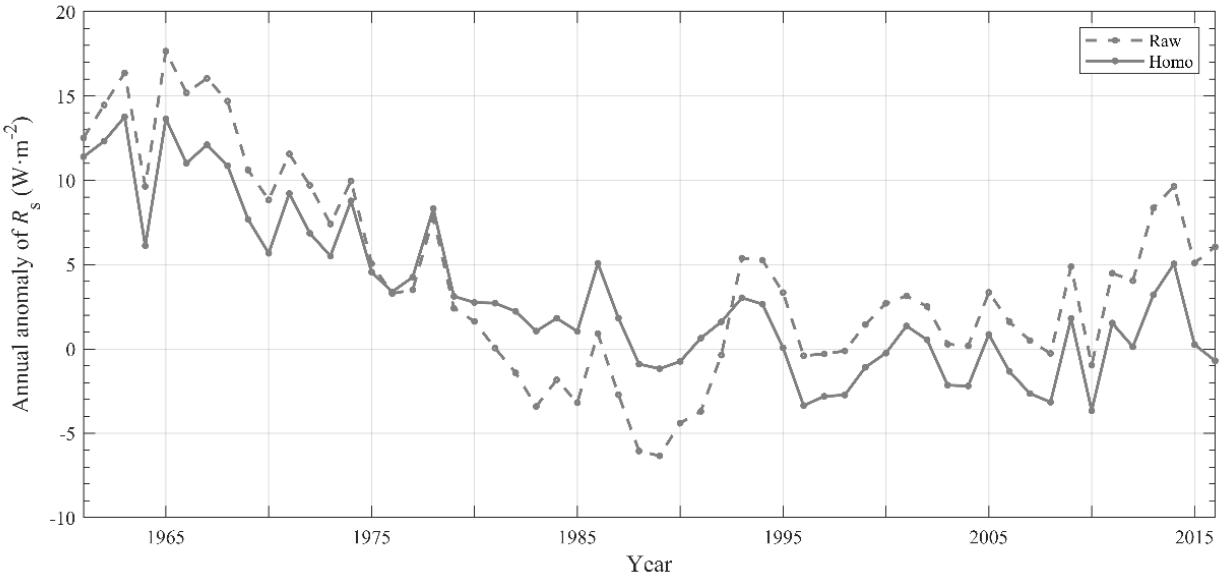


Figure S1 Annual mean anomalies of surface incident solar radiation (R_s; unit: W·m^{-2}) from raw observations (Raw; dashed gray) and homogenized observations (Homo; gray) over China during 1961–2016.

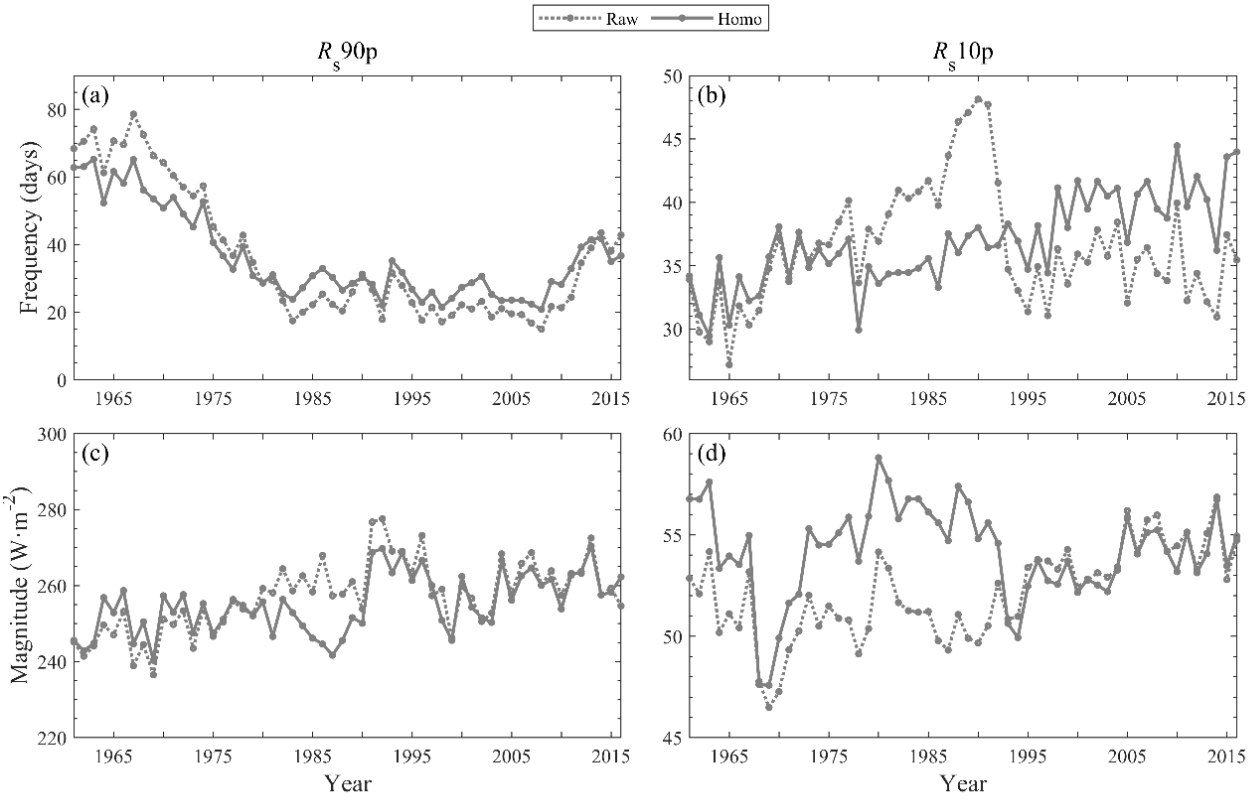


Figure S2 Time series of (a–b) frequency (unit: days) and (c–d) magnitude (unit: W·m^{-2}) in extremely high (R_s90p) and low (R_s10p) surface incident solar radiations in China from 1961 to 2016, based on raw observations (Raw; dashed gray) and homogenized observations (Homo; gray).