

Fig. 1: Reference CSSs, prefilters, base CSS, and equivalent CSSs obtained by our approach for CAVE dataset, where red, green, and blue lines represent the color CSS and the black line represents the prefilters.

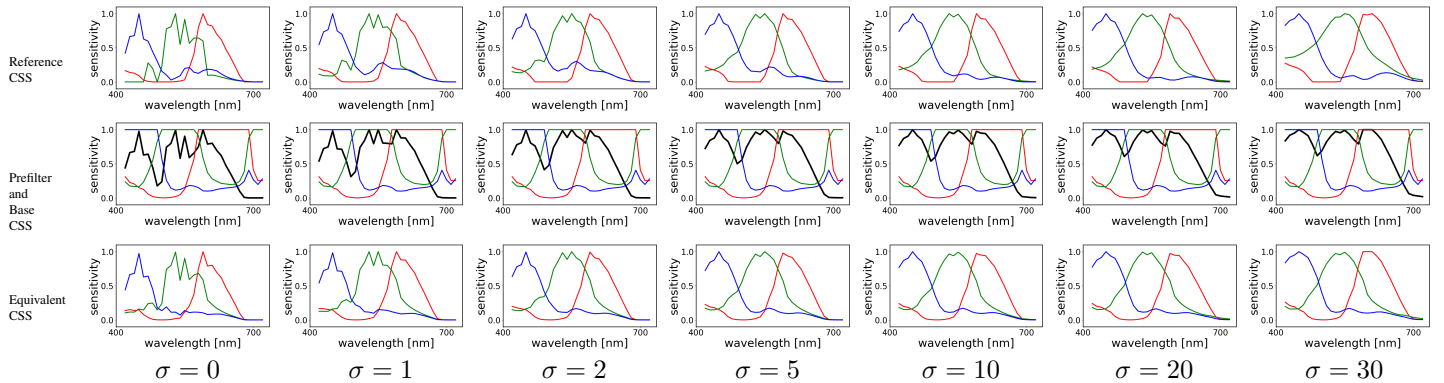


Fig. 2: Reference CSSs, prefilters, base CSS, and equivalent CSSs obtained by our approach for TokyoTech dataset, where red, green, and blue lines represent the color CSS and the black line represents the prefilters.

Table 1: Numerical comparisons of CAVE dataset, where Noisy, SP, and Net represent signal processing imaging without denoising, signal processing imaging, and network-based imaging, respectively.

Metric	Noise level	Sony			Canon		Olympus		Nikon		Ours
		Noisy	SP	Net	SP	Net	SP	Net	SP	Net	
CPSNR	0	43.16	43.16	46.37	43.19	47.02	41.51	45.61	42.31	46.23	48.07
	1	41.61	42.20	45.46	42.61	45.82	41.28	44.88	41.70	44.94	46.94
	2	39.29	40.95	44.17	41.81	44.70	40.90	44.12	40.82	44.19	46.08
	5	33.95	37.77	41.63	39.46	42.35	39.59	42.51	38.27	41.74	43.59
	10	28.70	34.03	39.11	36.32	40.35	37.57	40.52	34.93	39.35	41.17
	20	23.07	29.52	36.50	32.21	37.52	34.29	37.99	30.65	36.82	38.54
	30	19.81	26.66	34.39	29.48	35.73	31.82	36.55	27.83	34.88	36.94
	Avg.	32.80	36.33	41.09	37.87	41.93	38.14	41.74	36.64	41.16	43.05
SSIM	0	0.986	0.986	0.995	0.987	0.996	0.982	0.994	0.984	0.996	0.997
	1	0.981	0.983	0.994	0.985	0.995	0.981	0.994	0.982	0.995	0.997
	2	0.970	0.978	0.993	0.982	0.993	0.980	0.990	0.978	0.993	0.996
	5	0.901	0.958	0.987	0.971	0.989	0.974	0.988	0.963	0.987	0.992
	10	0.783	0.914	0.980	0.943	0.982	0.958	0.983	0.925	0.981	0.988
	20	0.578	0.830	0.966	0.877	0.972	0.908	0.973	0.846	0.968	0.979
	30	0.435	0.762	0.953	0.814	0.957	0.850	0.959	0.776	0.955	0.972
	Avg.	0.805	0.916	0.981	0.937	0.983	0.948	0.983	0.922	0.982	0.989

Table 2: Numerical comparison of TokyoTech dataset where Noisy, SP, and Net represent signal processing imaging without denoising, signal processing imaging, and network-based imaging, respectively.

Metric	Noise level	Sony			Canon		Olympus		Nikon		Ours
		Noisy	SP	Net	SP	Net	SP	Net	SP	Net	
CPSNR	0	37.75	37.75	42.60	38.74	42.86	35.44	40.44	36.28	41.02	44.35
	1	37.11	37.02	41.10	38.21	42.07	35.30	39.91	35.87	40.02	43.69
	2	35.84	35.97	39.87	37.38	41.03	35.05	39.09	35.25	39.08	42.41
	5	32.01	33.58	36.84	35.33	38.46	34.20	37.57	33.59	36.74	39.72
	10	27.62	31.07	34.79	33.05	35.98	32.91	35.69	31.58	34.91	37.54
	20	22.47	27.93	32.03	30.17	33.45	30.98	33.63	28.85	32.35	34.56
	30	19.34	25.73	30.78	28.18	31.79	29.47	32.30	26.84	30.83	33.22
	Avg.	30.31	32.72	36.86	34.44	37.95	33.34	36.95	32.61	36.42	39.36
SSIM	0	0.972	0.972	0.992	0.971	0.991	0.967	0.989	0.971	0.990	0.995
	1	0.969	0.969	0.988	0.970	0.989	0.966	0.987	0.969	0.988	0.994
	2	0.960	0.963	0.983	0.966	0.987	0.964	0.986	0.965	0.981	0.992
	5	0.908	0.942	0.970	0.954	0.977	0.956	0.978	0.949	0.970	0.986
	10	0.795	0.906	0.953	0.930	0.965	0.940	0.966	0.920	0.956	0.974
	20	0.600	0.844	0.926	0.883	0.945	0.905	0.949	0.865	0.929	0.958
	30	0.462	0.791	0.910	0.839	0.925	0.868	0.934	0.815	0.910	0.945
	Avg.	0.809	0.912	0.960	0.930	0.968	0.938	0.970	0.922	0.961	0.978

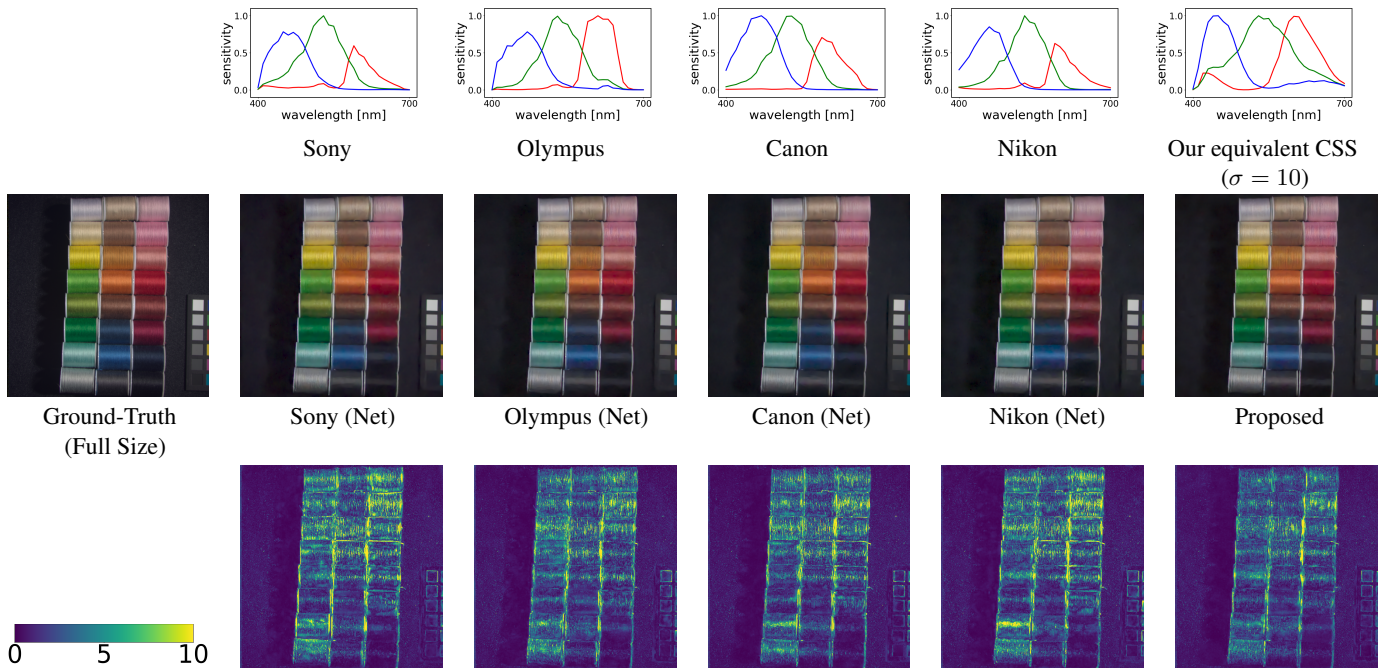


Fig. 3: Visual comparisons and RMSE maps of CAVE dataset for noise level $\sigma = 10$, where Net represents network-based imaging.

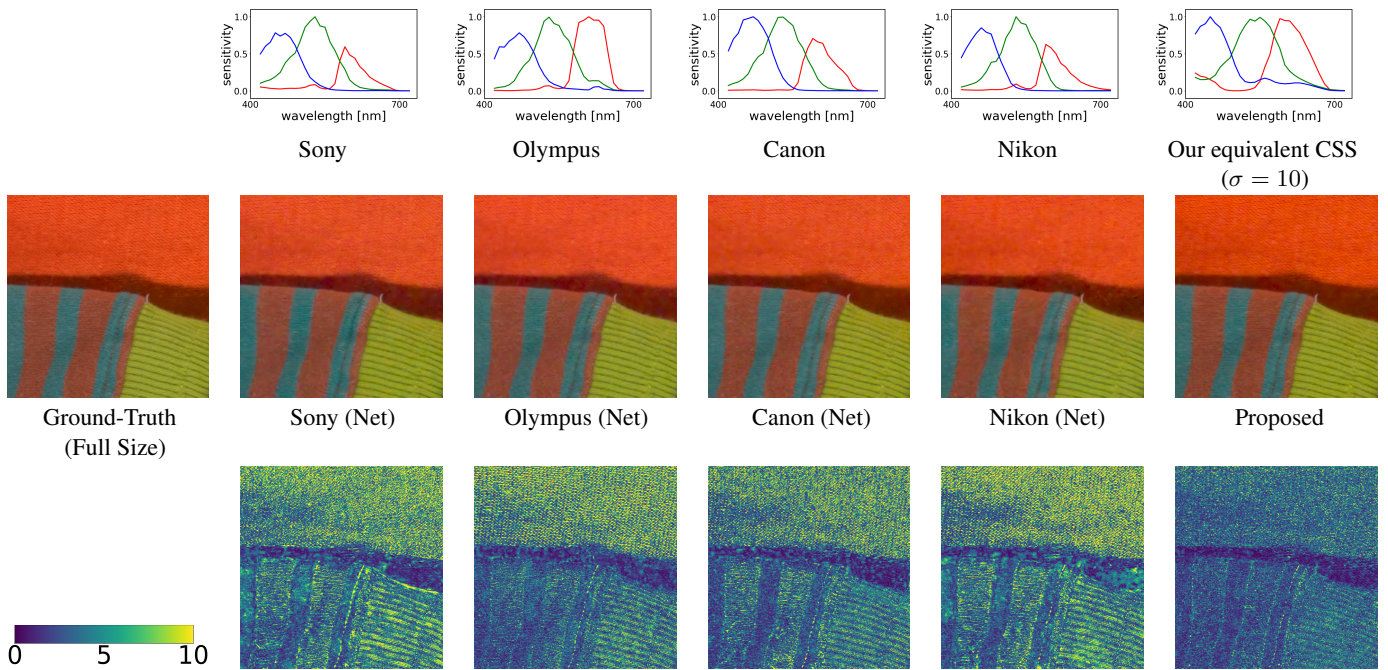


Fig. 4: Visual comparisons and RMSE maps of TokyoTech dataset for noise level $\sigma = 10$, where Net represents network-based imaging.

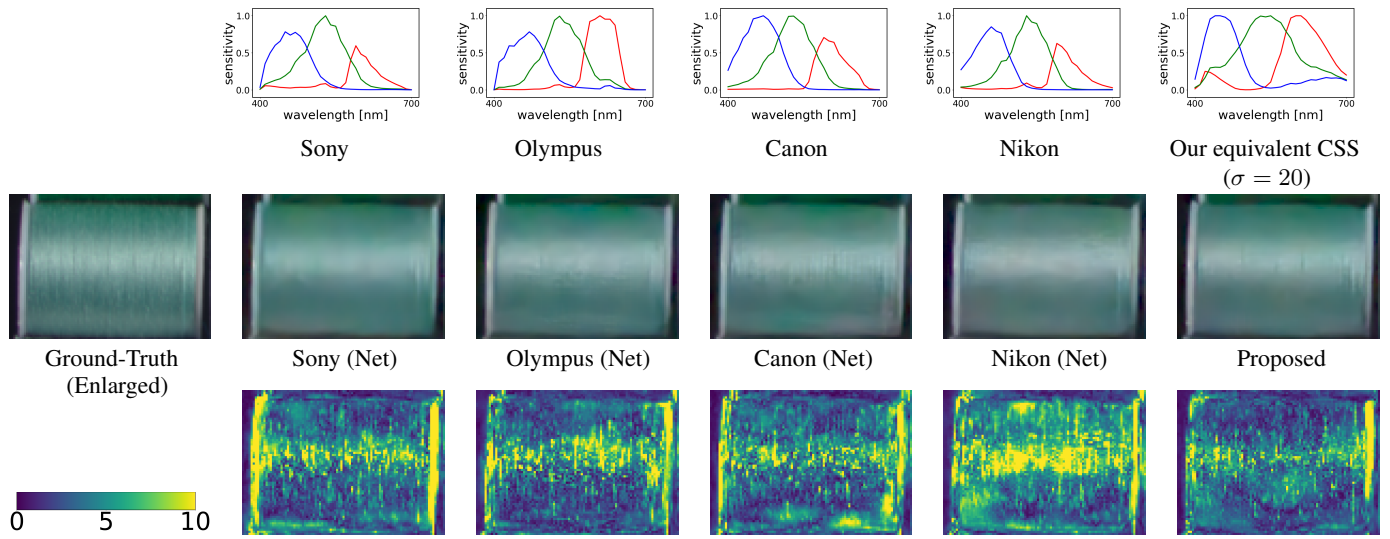


Fig. 5: Visual comparisons and RMSE maps of CAVE dataset for noise level $\sigma = 20$, where Net represents network-based imaging.

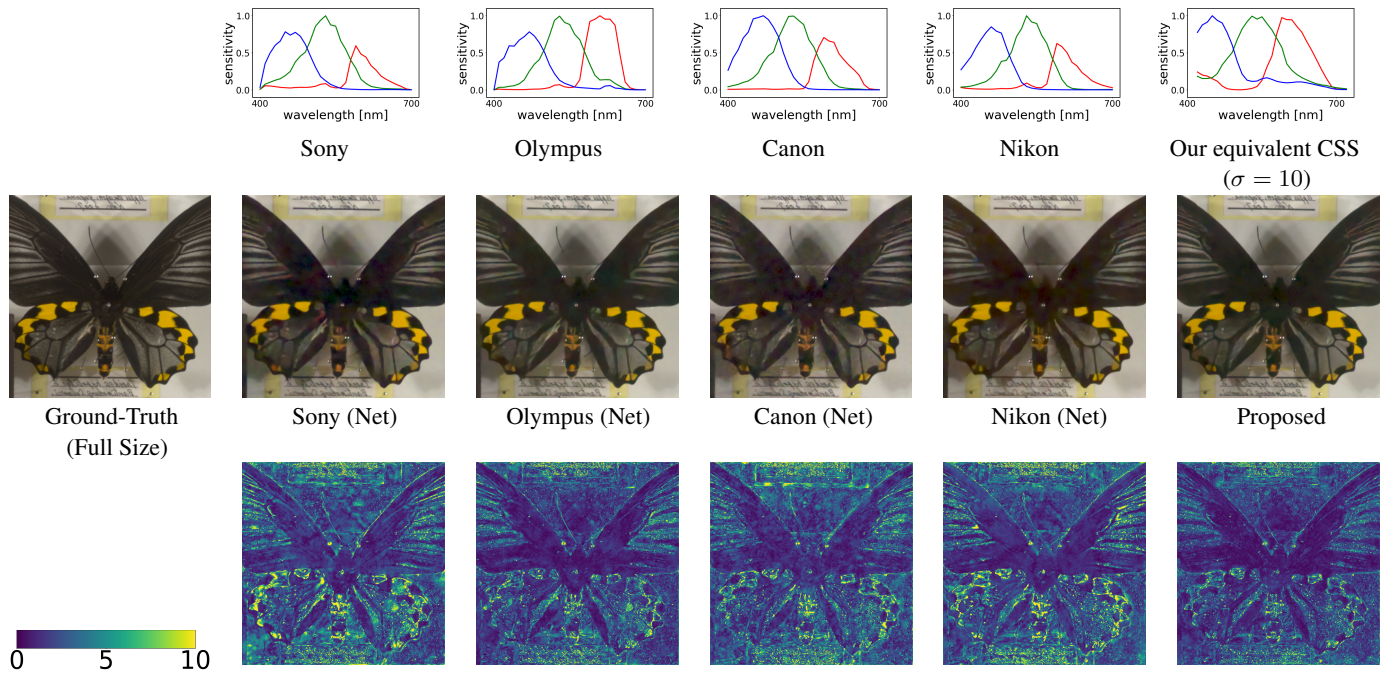


Fig. 6: Visual comparisons and RMSE maps of TokyoTech dataset for noise level $\sigma = 20$, where Net represents network-based imaging.

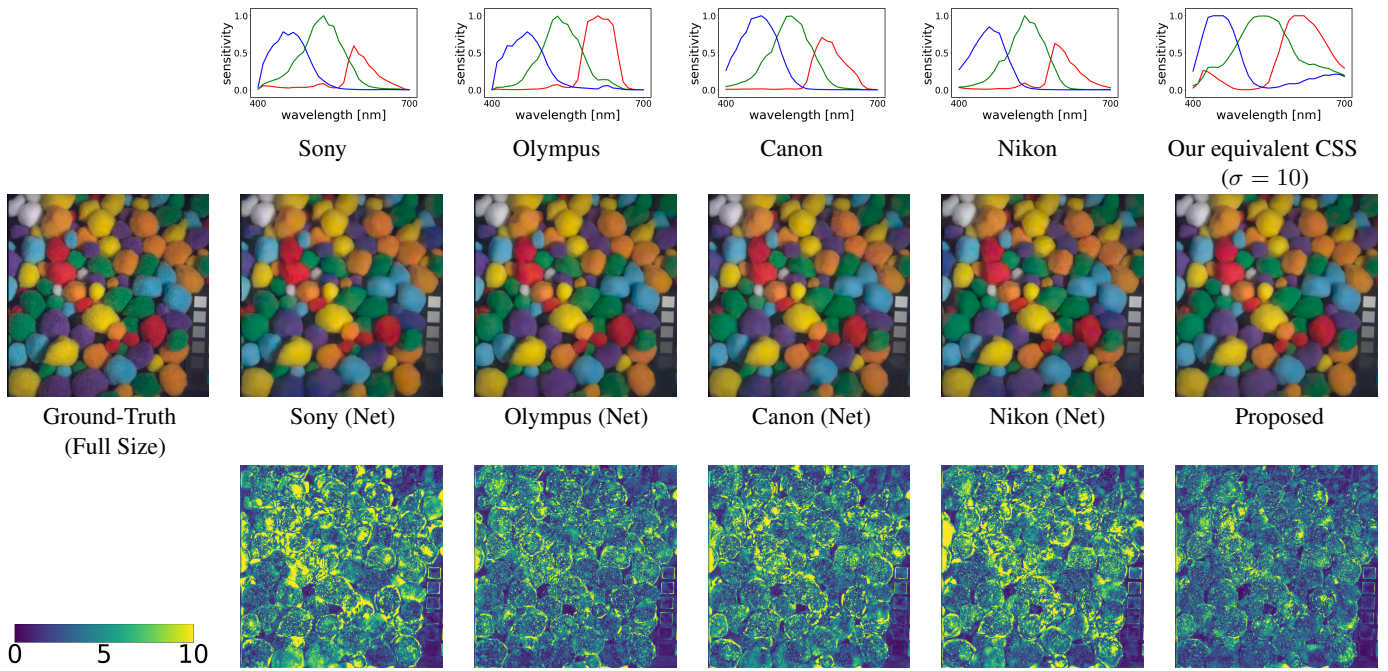


Fig. 7: Visual comparisons and RMSE maps of CAVE dataset for noise level $\sigma = 30$, where Net represents network-based imaging.

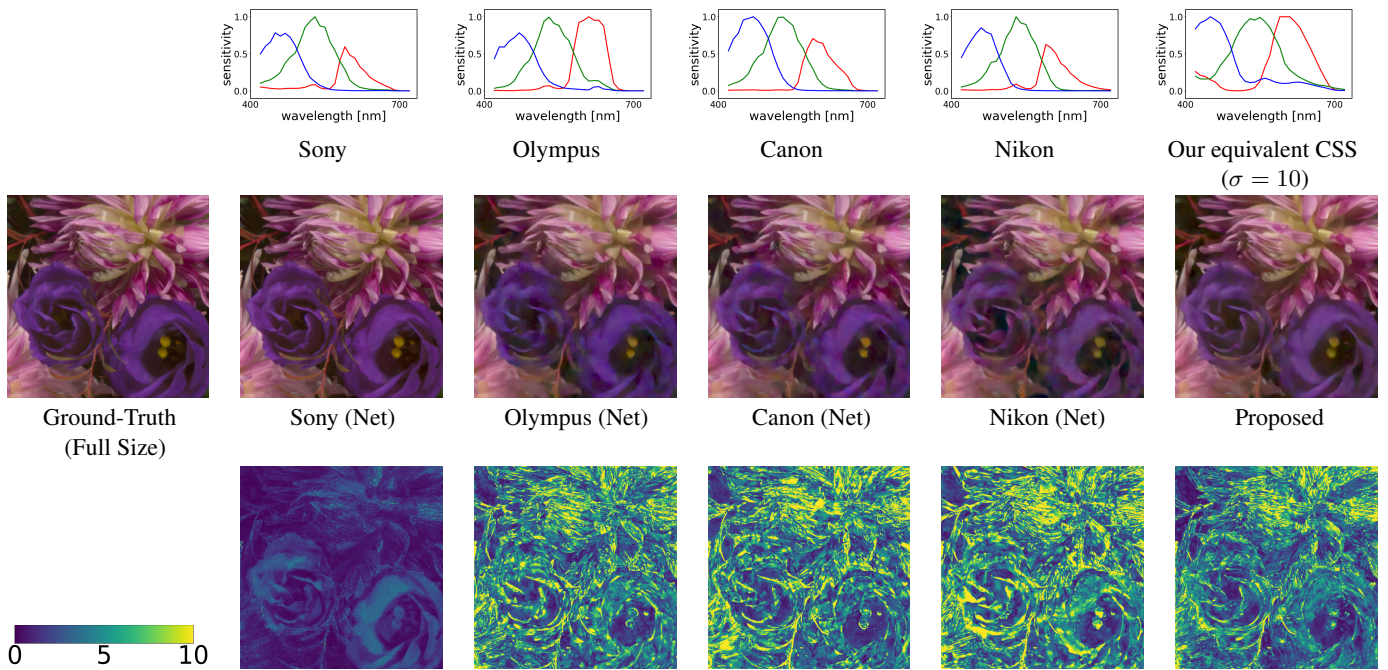


Fig. 8: Visual comparisons and RMSE maps of TokyoTech dataset for noise level $\sigma = 30$, where Net represents network-based imaging.