Generating Training Data for Denoising Real RGB Images via Camera Pipeline Simulation: Supplementary Material

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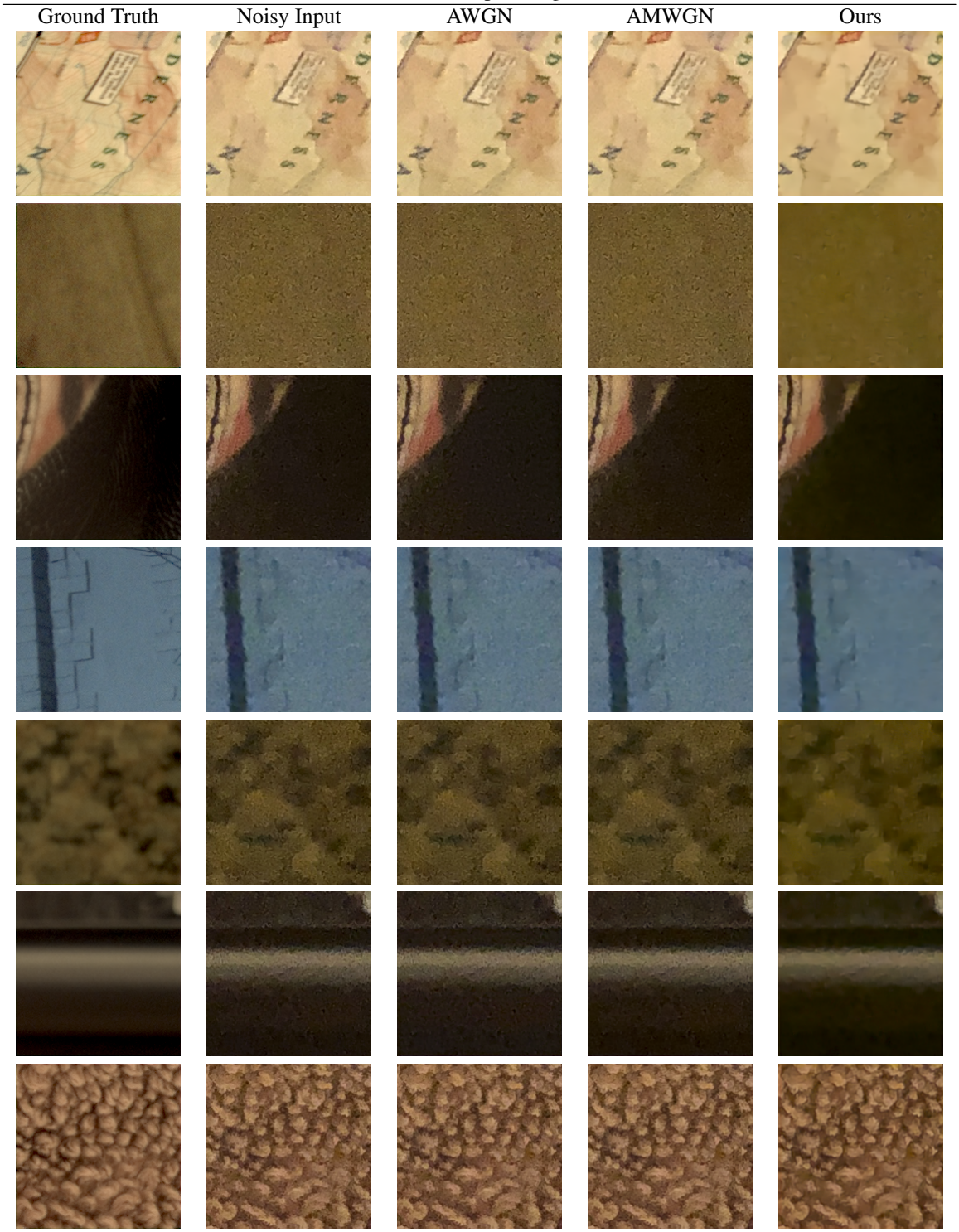
This section supplements results shown in Fig. 7 of the main paper. It incldues test results on the iPhone 8, the Pixel XL, and the Samsung Galaxy S7 test data.

AWGN Models vs Ours (Main Paper's Fig. 7): iPhone 8 Test Data

Ground Truth	Noisy Input	AWGN	AMWGN	Ours

AWGN Models vs Ours (Main Paper's Fig. 7): iPhone 8 Test Data



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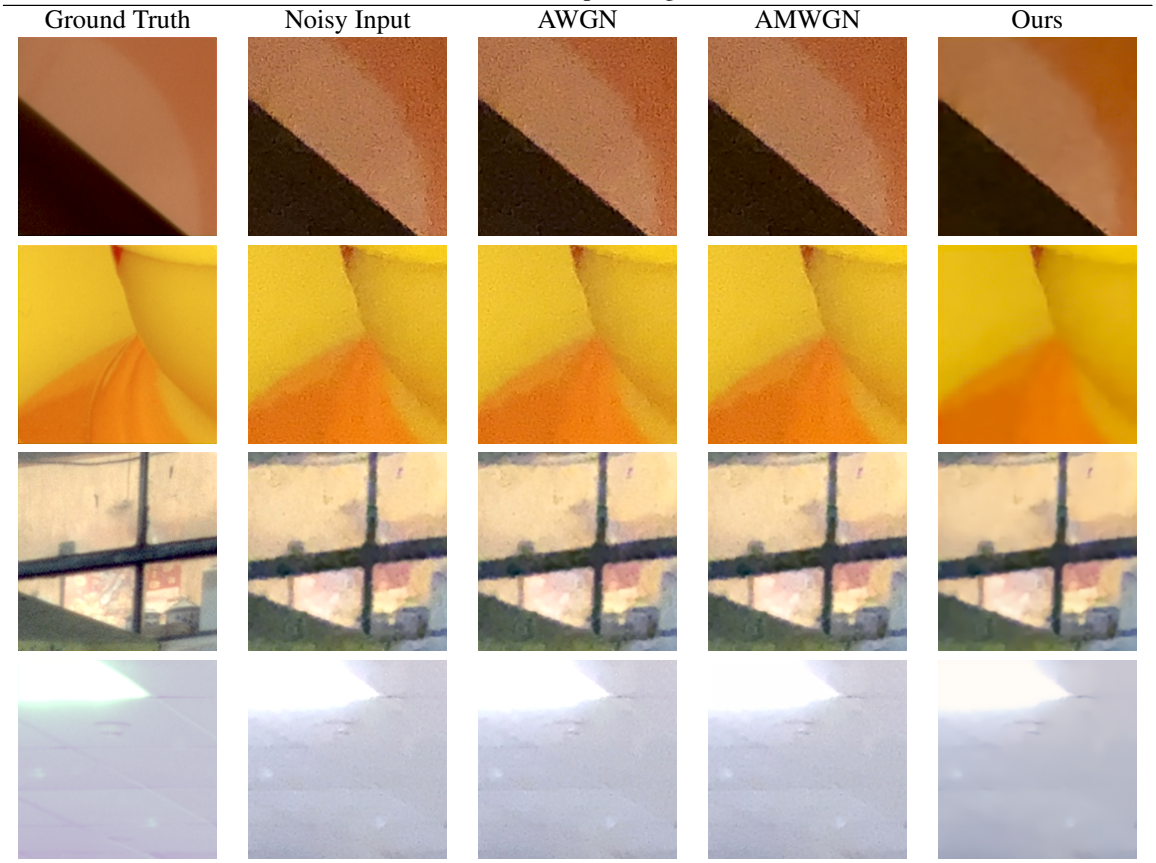
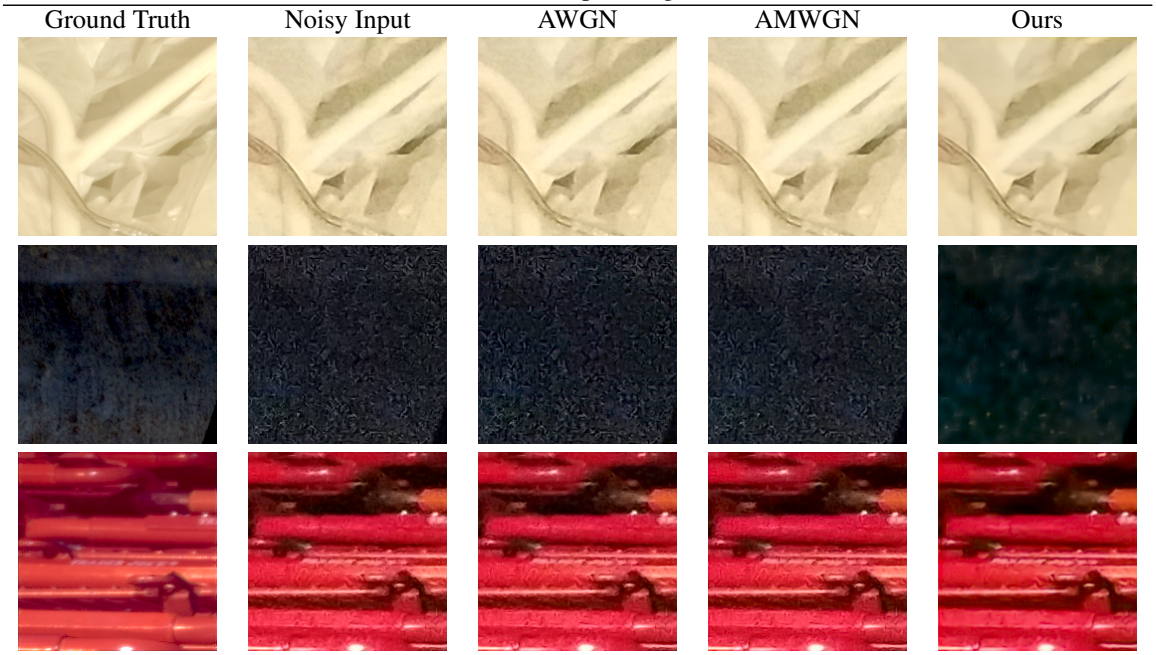


AWGN Models vs Ours (Main Paper's Fig. 7): Pixel XL Test Data



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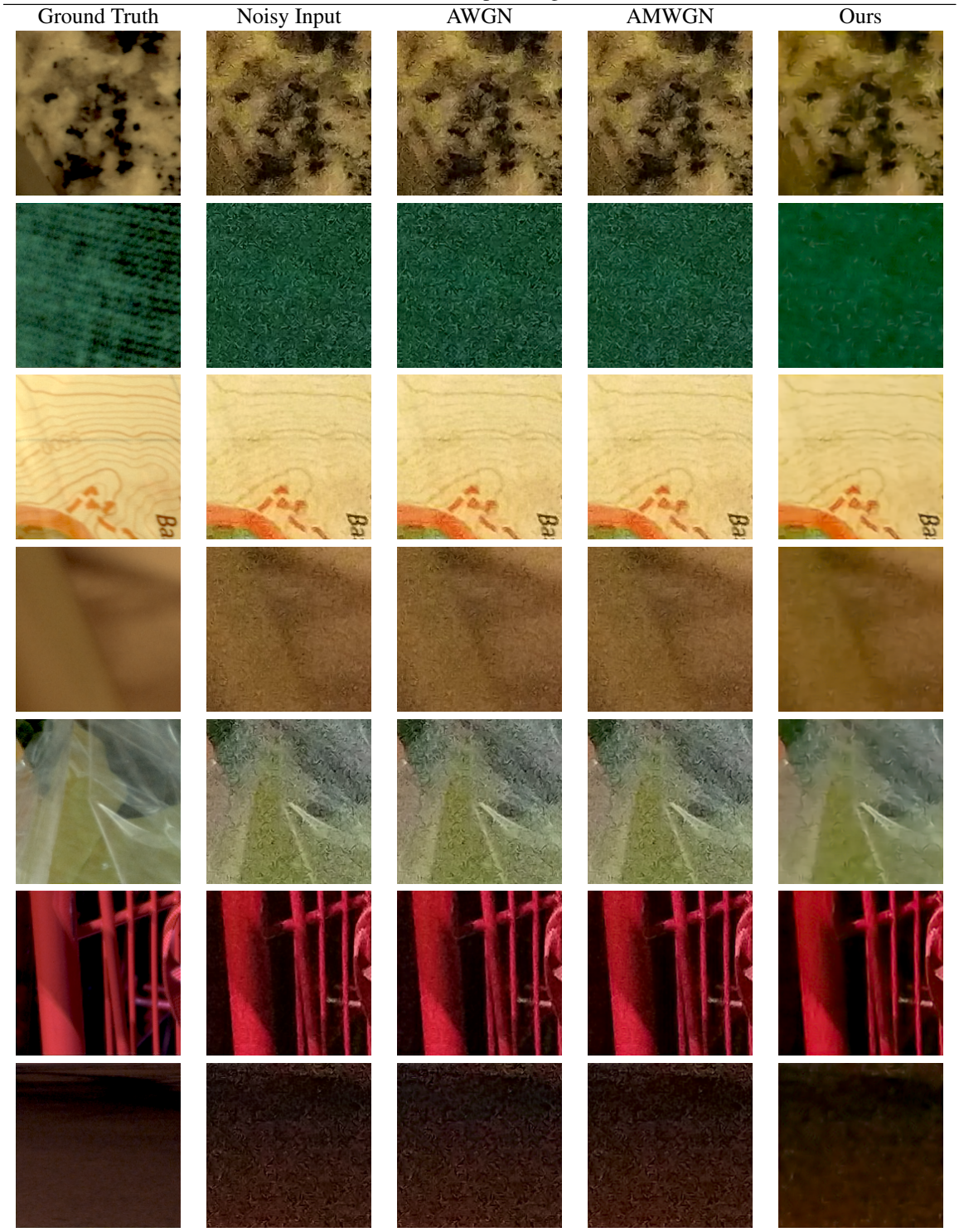

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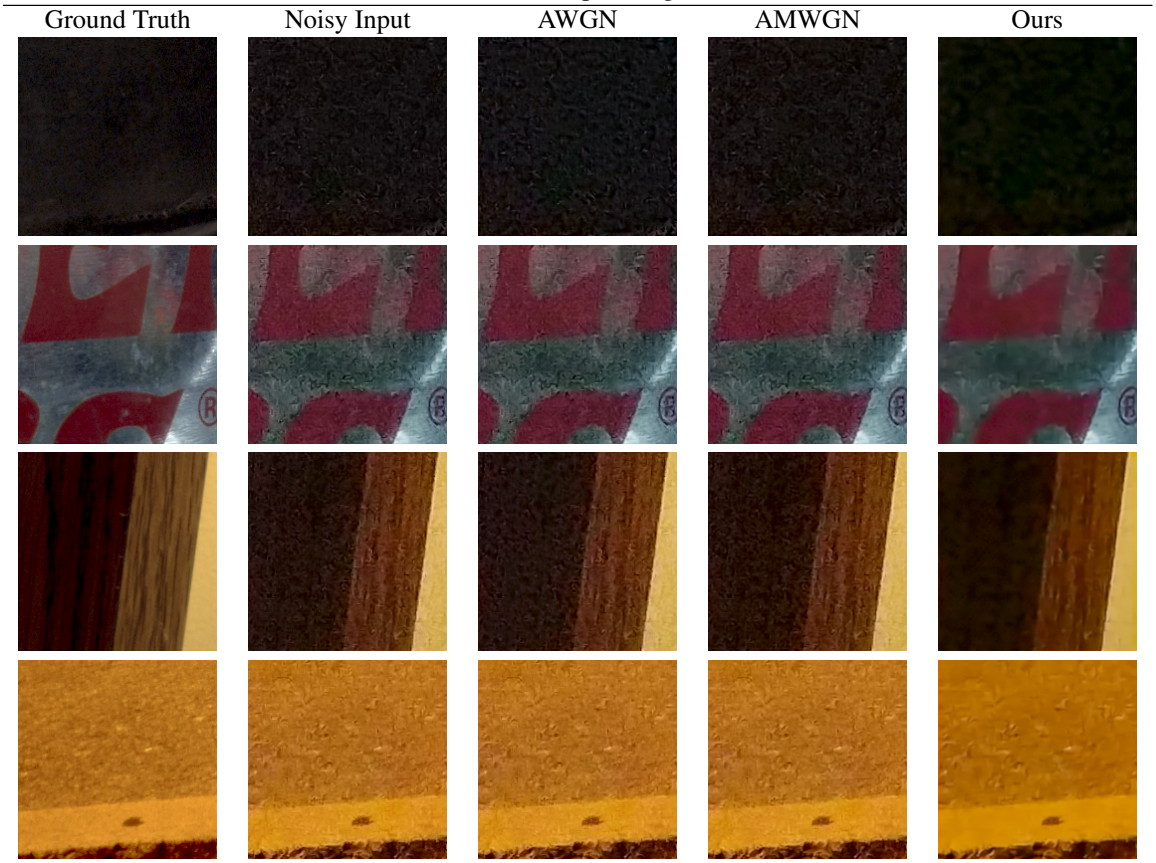
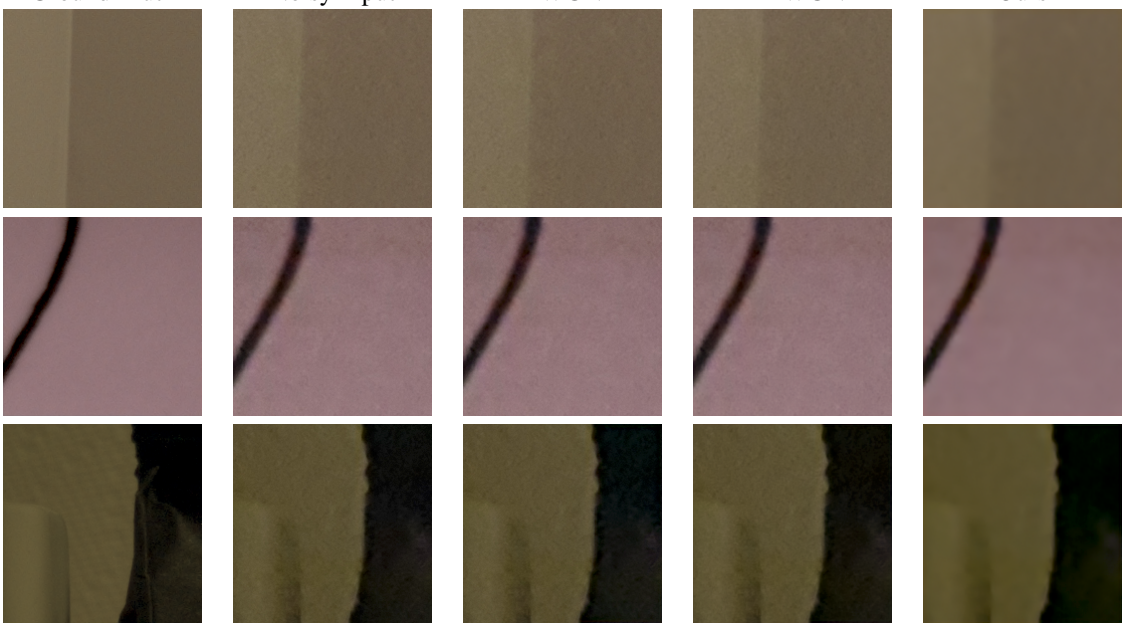


AWGN Models vs Ours (Main Paper's Fig. 7): Samsung Galaxy S7 Test Data



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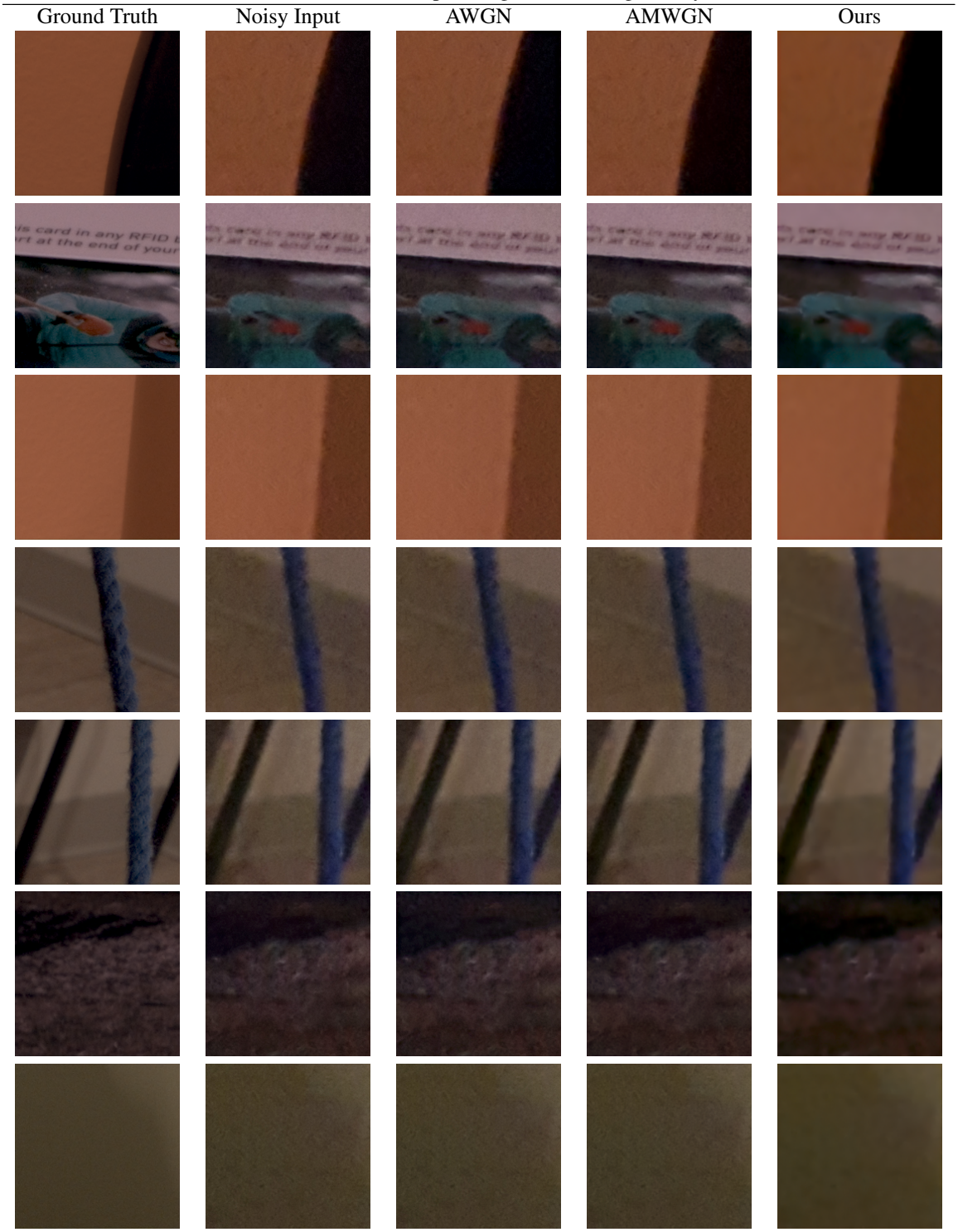

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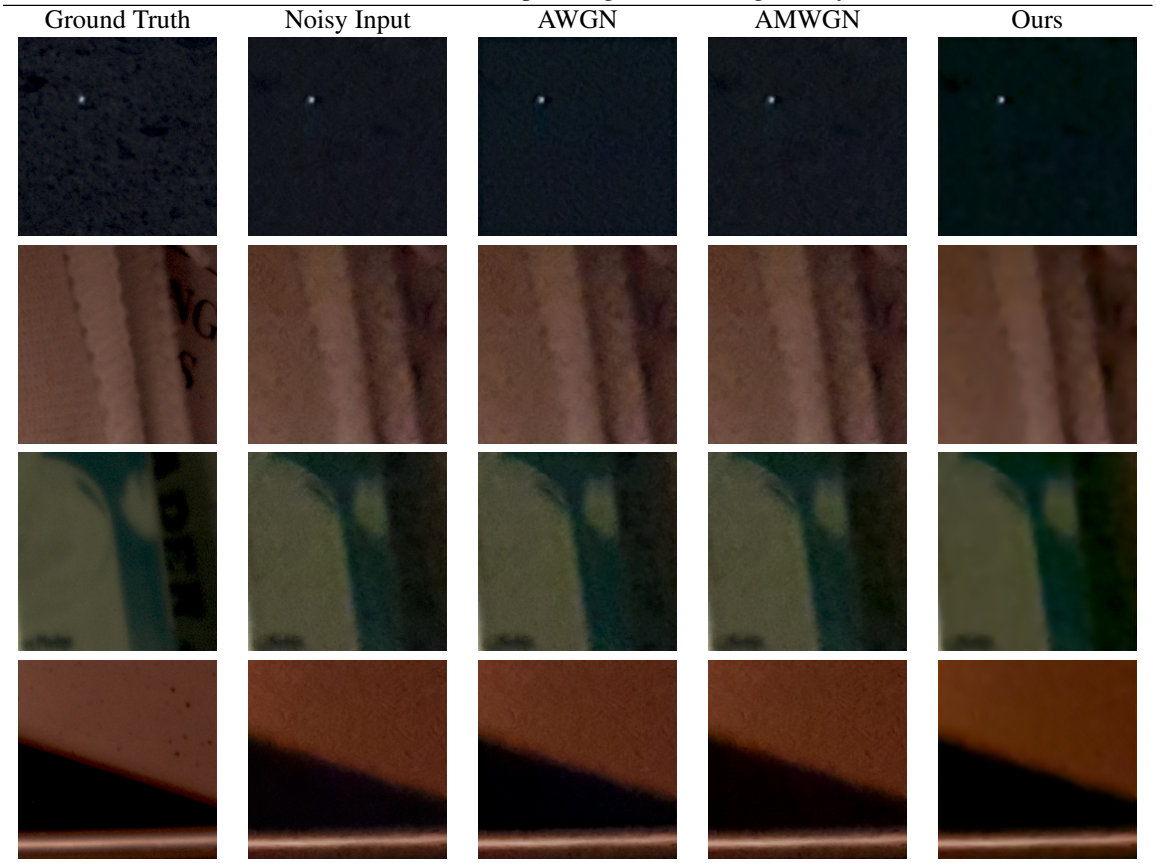

2. Additional Result from the Ablation Study

This section supplements results shown in Fig. 9 of the main paper. It incldues test results on the iPhone 8, the Pixel XL, and the Samsung Galaxy S7 test data.

The Effect of Disabling Components of Our Pipeline (Main Paper's Fig. 9): iPhone 8 Test Data

The Effect of Disabling Components of Our Pipeline (Main Paper's Fig. 9): iPhone 8 Test Data

The Effect of Disabling Components of Our Pipeline (Main Paper's Fig. 9): Pixel XL Test Data

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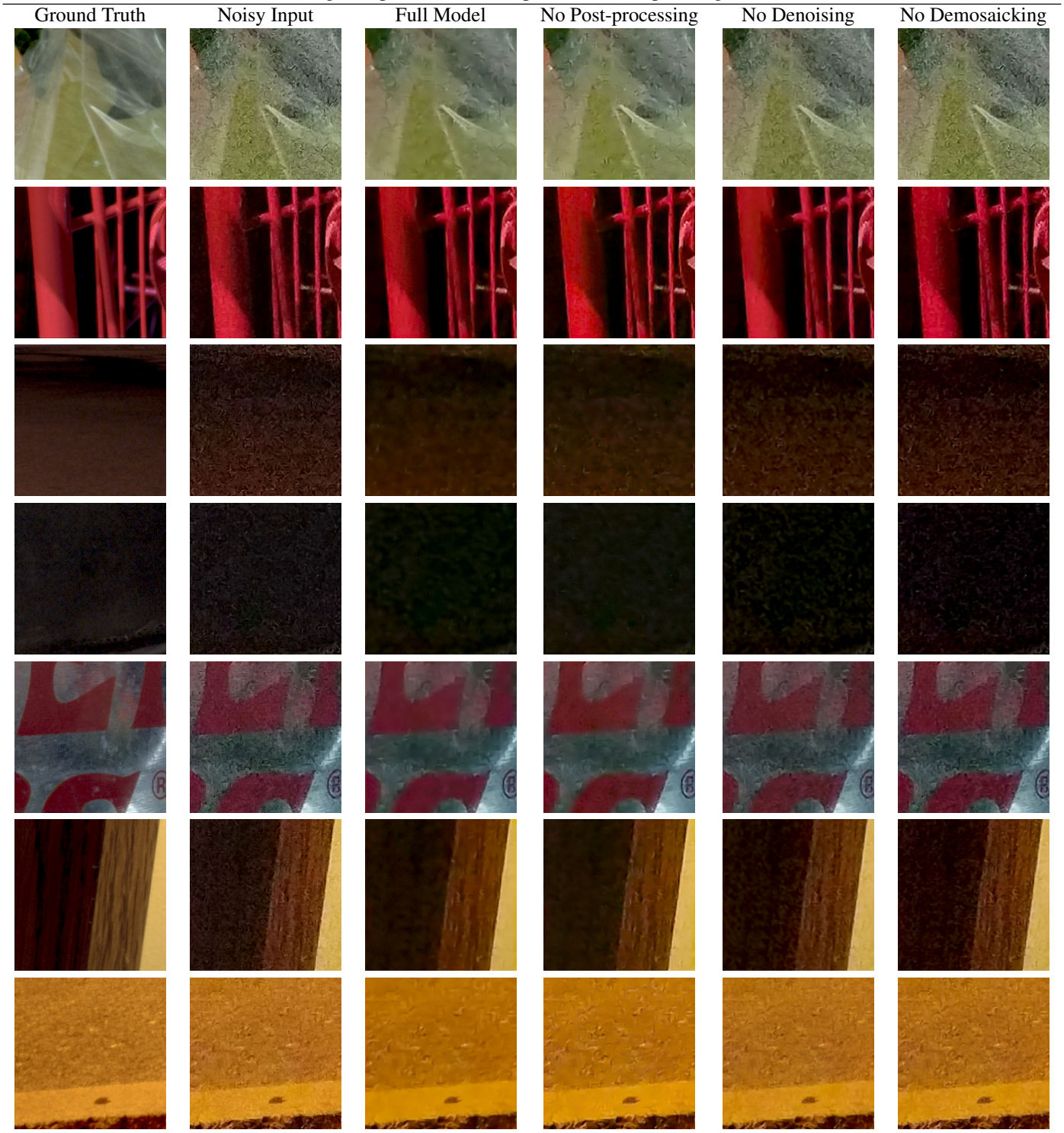
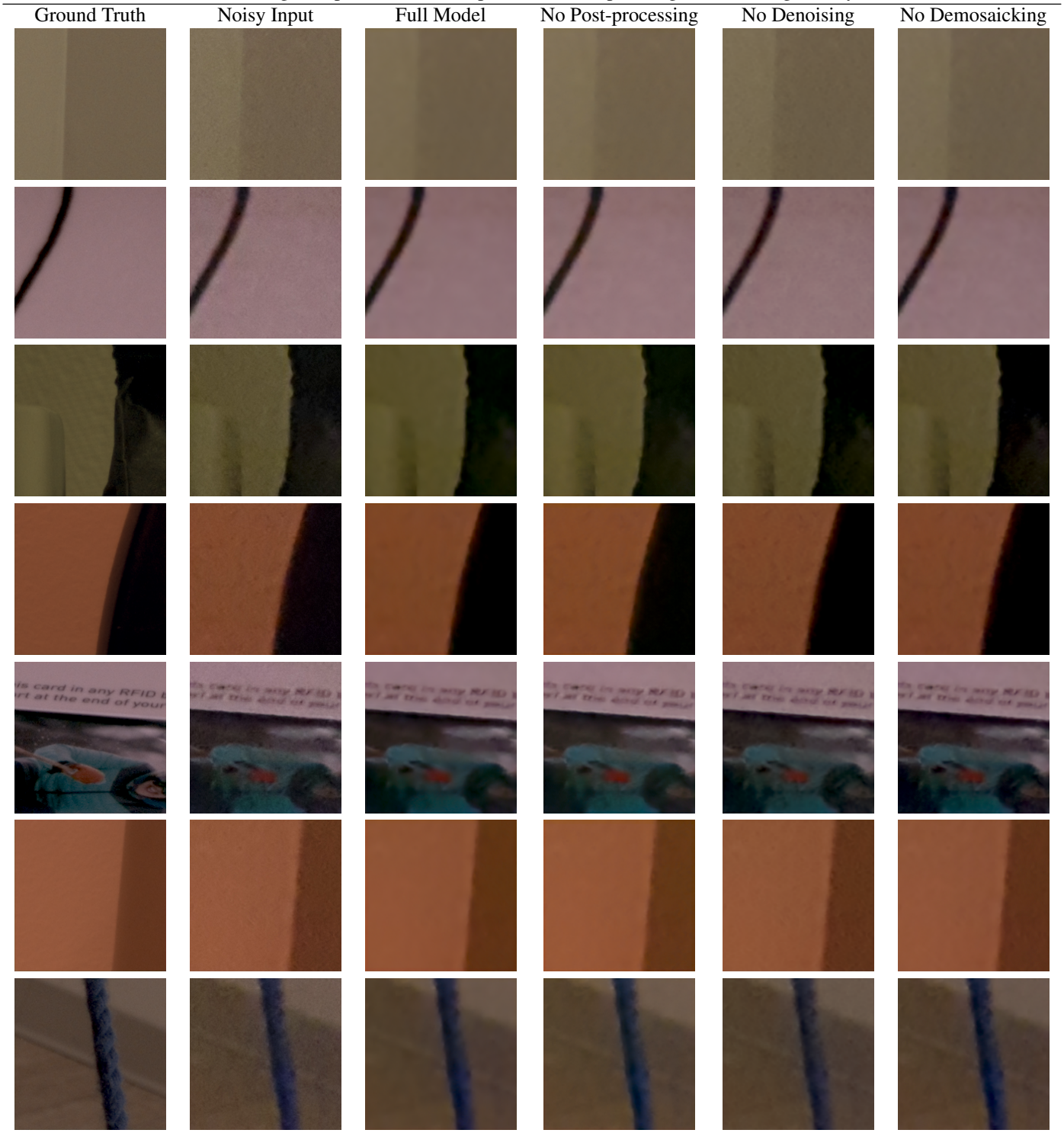
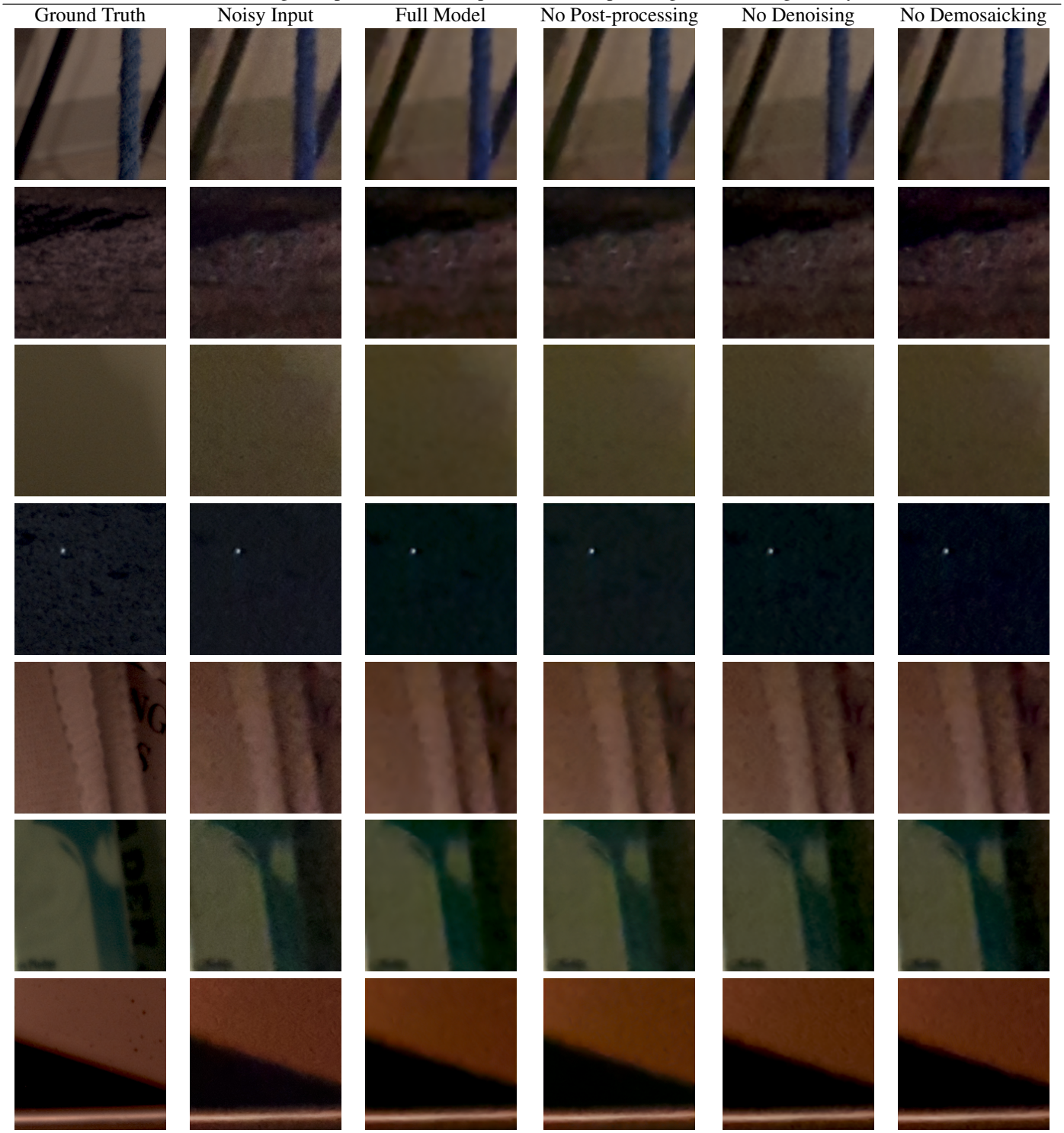


The Effect of Disabling Components of Our Pipeline (Main Paper's Fig. 9): Samsung Galaxy S7 Test Data



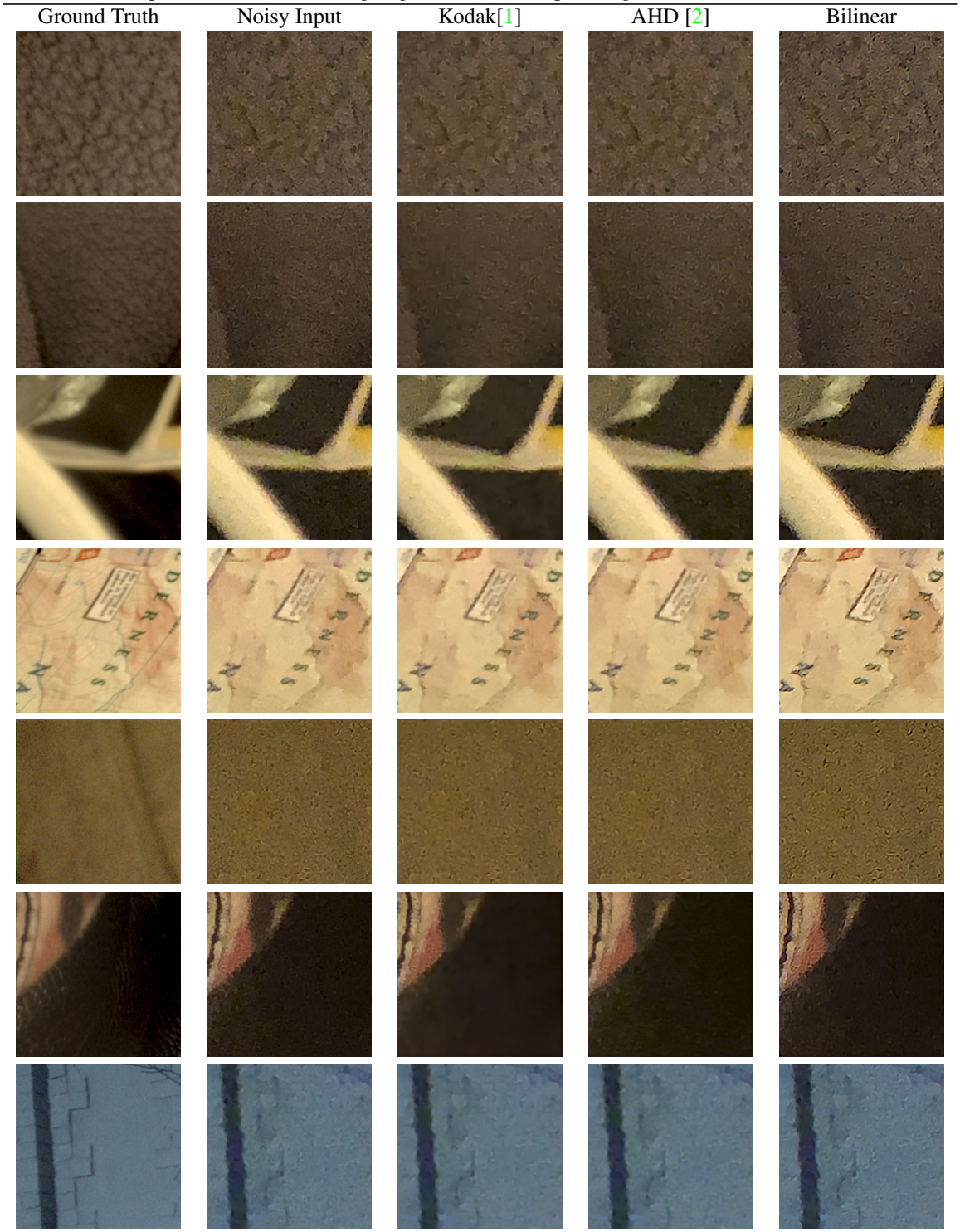
The Effect of Disabling Components of Our Pipeline (Main Paper's Fig. 9): Samsung Galaxy S7 Test Data



3. Additional Patches from Demosaicking Algorithm Study

This section supplements results shown in Fig. 10 of the main paper. It incldues test results on the iPhone 8, the Pixel XL, and the Samsung Galaxy S7 test data.

Comparison of Demosaicking Algorithm (Main Paper's Fig. 10): iPhone 8 Test Data



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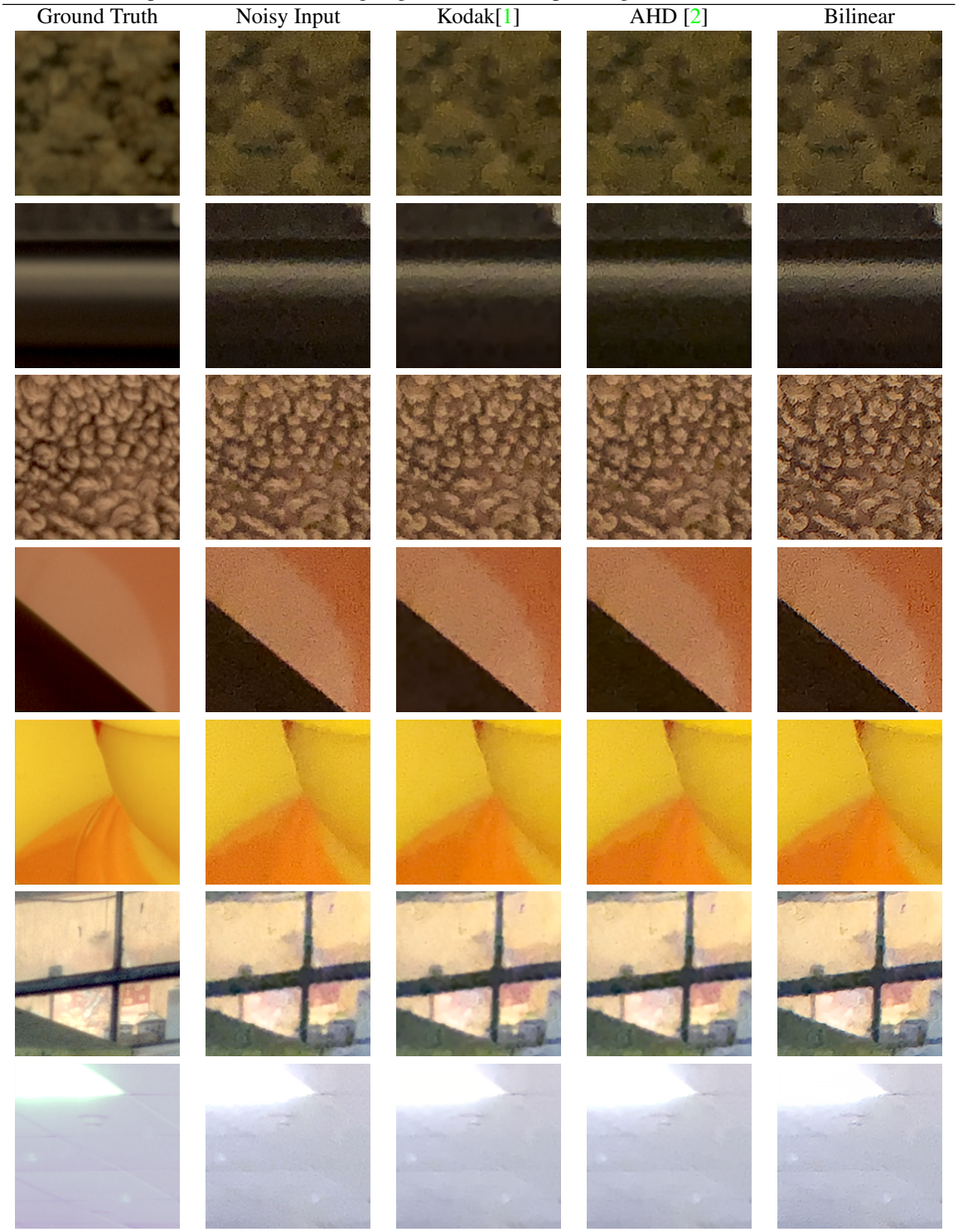
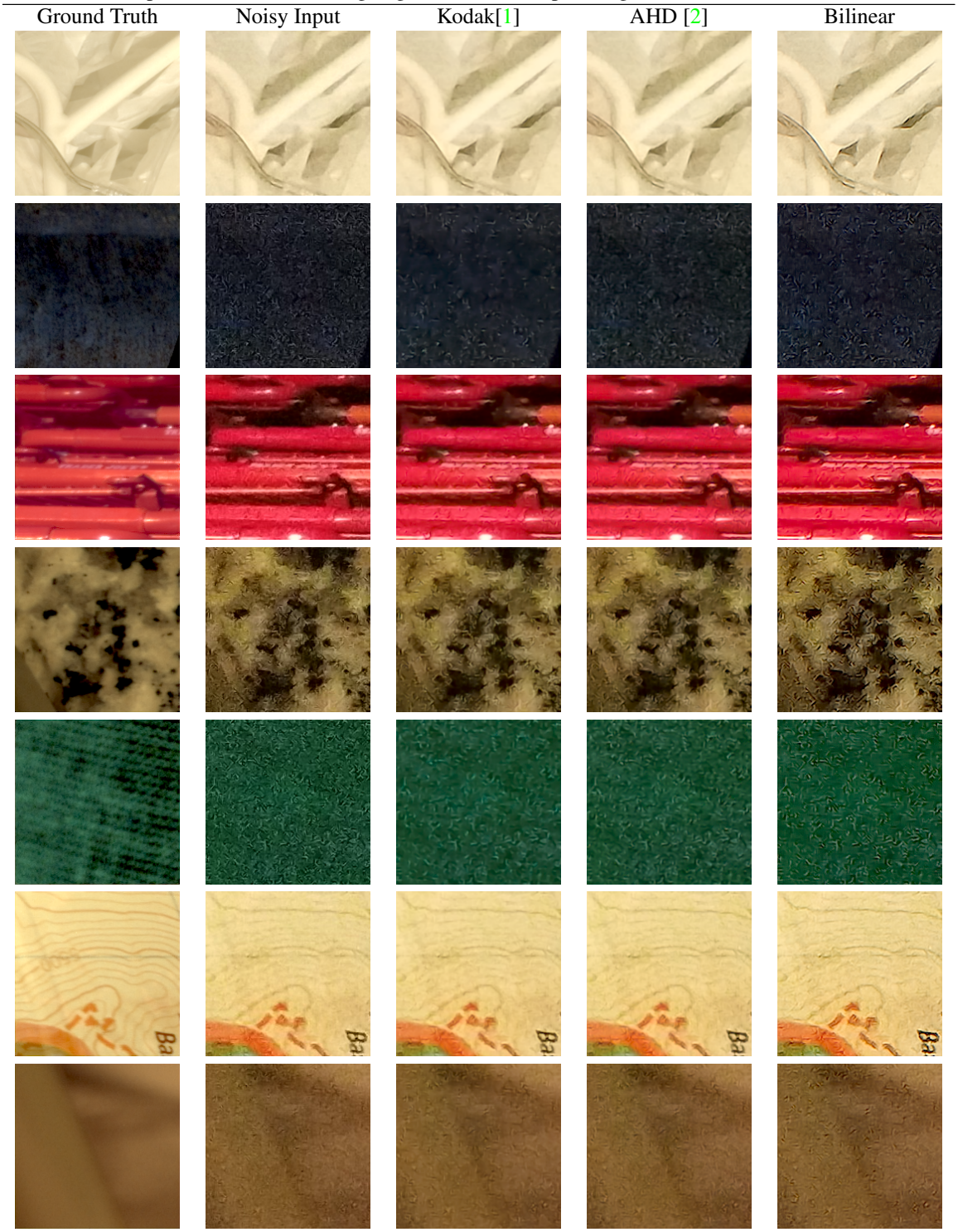
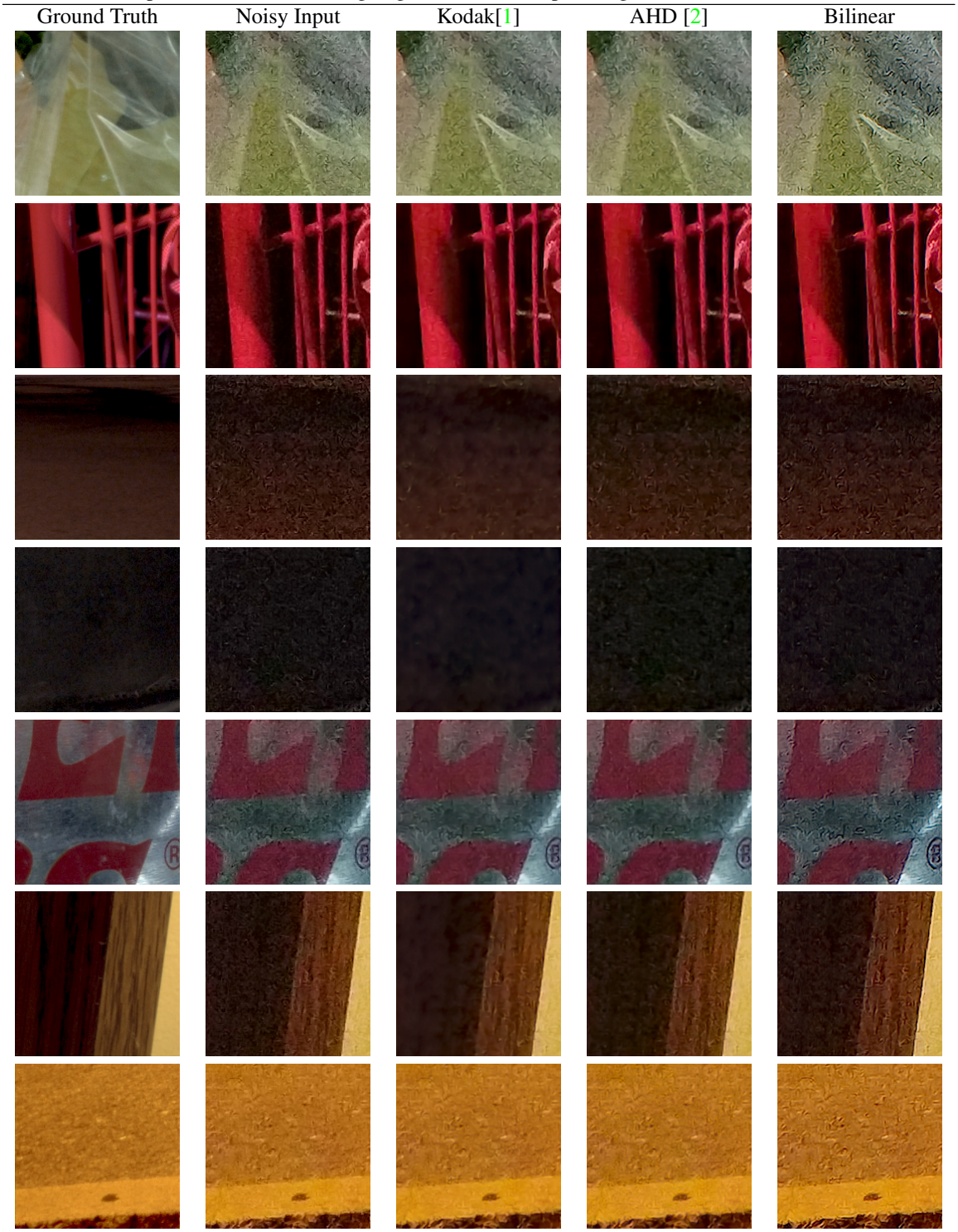


Comparison of Demosaicking Algorithm (Main Paper's Fig. 10): Pixel XL Test Data

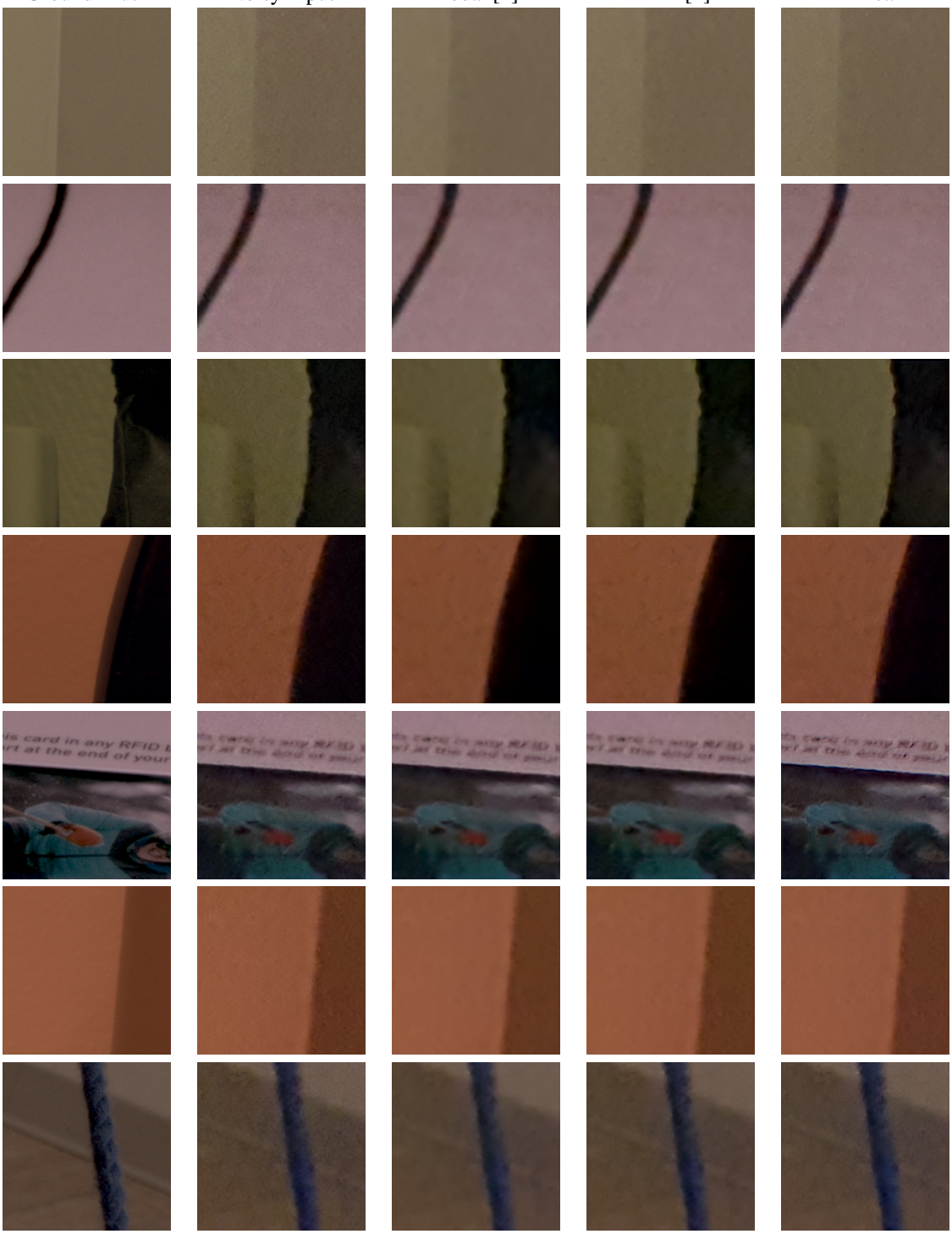


Comparison of Demosaicking Algorithm (Main Paper's Fig. 10): Pixel XL Test Data



Comparison of Demosaicking Algorithm (Main Paper's Fig. 10): Samsung Galaxy S7 Test Data

Ground Truth	Noisy Input	Kodak[1]	AHD [2]	Bilinear



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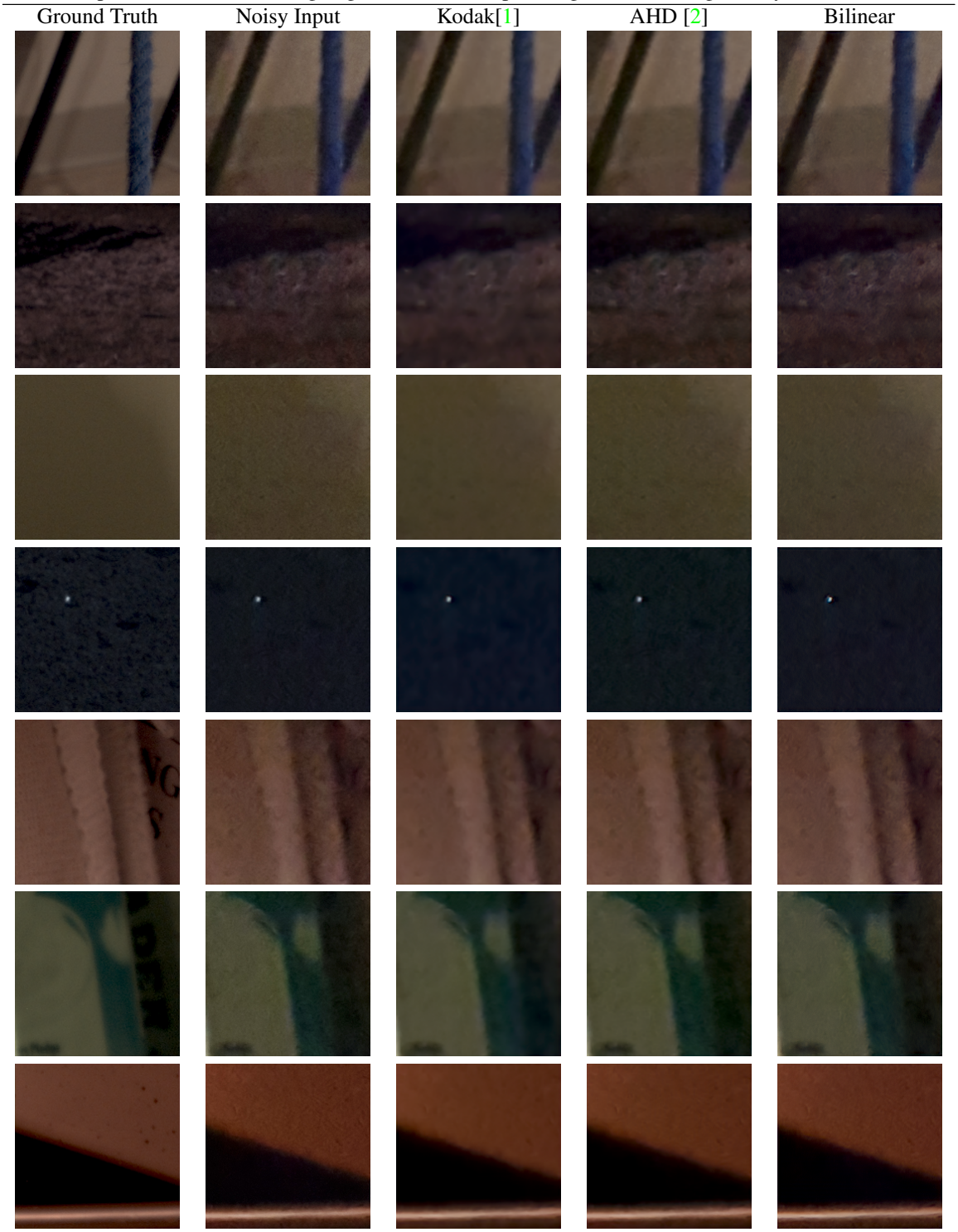
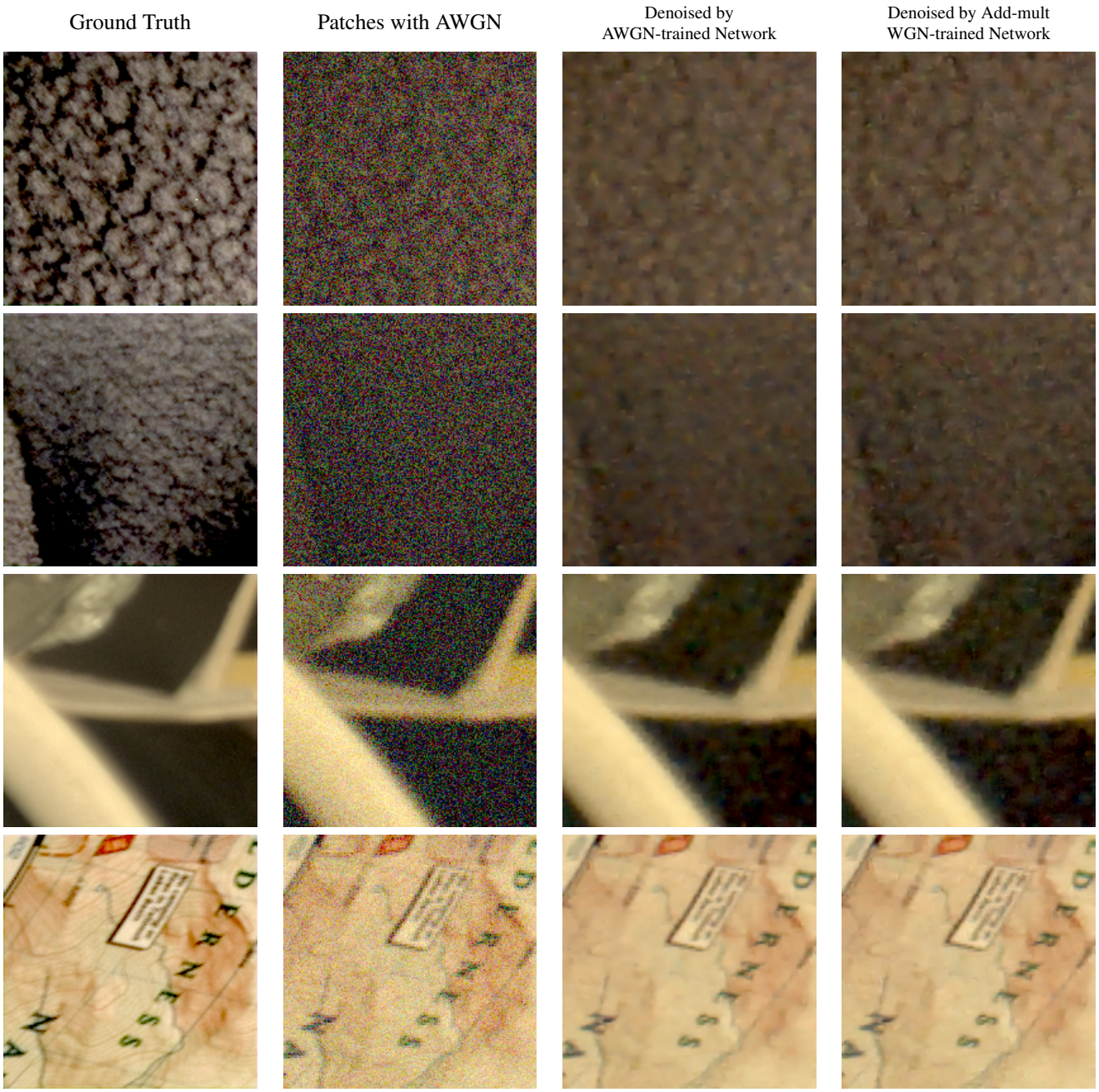


4. Additional Result from AWGN-trained Networks on Patches with AWGN

This section supplements results shown in Fig. 8 of the main paper. It shows that our AWGN-trained models are working correctly. We use clean patches from the iPhone 8, the Pixel XL, and the Samsung Galaxy S7 test data.

Testing AWGN Models on AWGN Patches (Main Paper's Fig. 8): iPhone 8 Test Data



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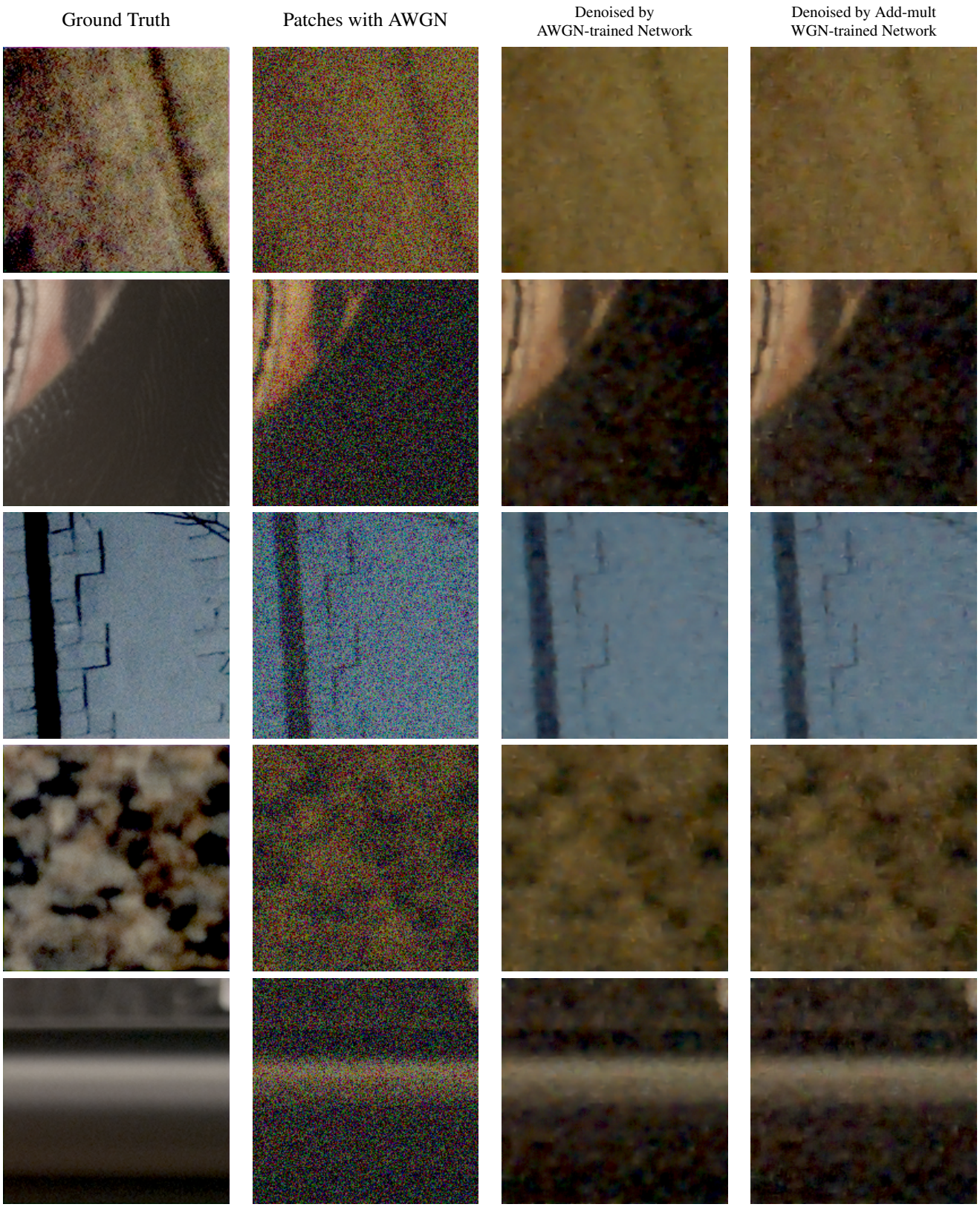
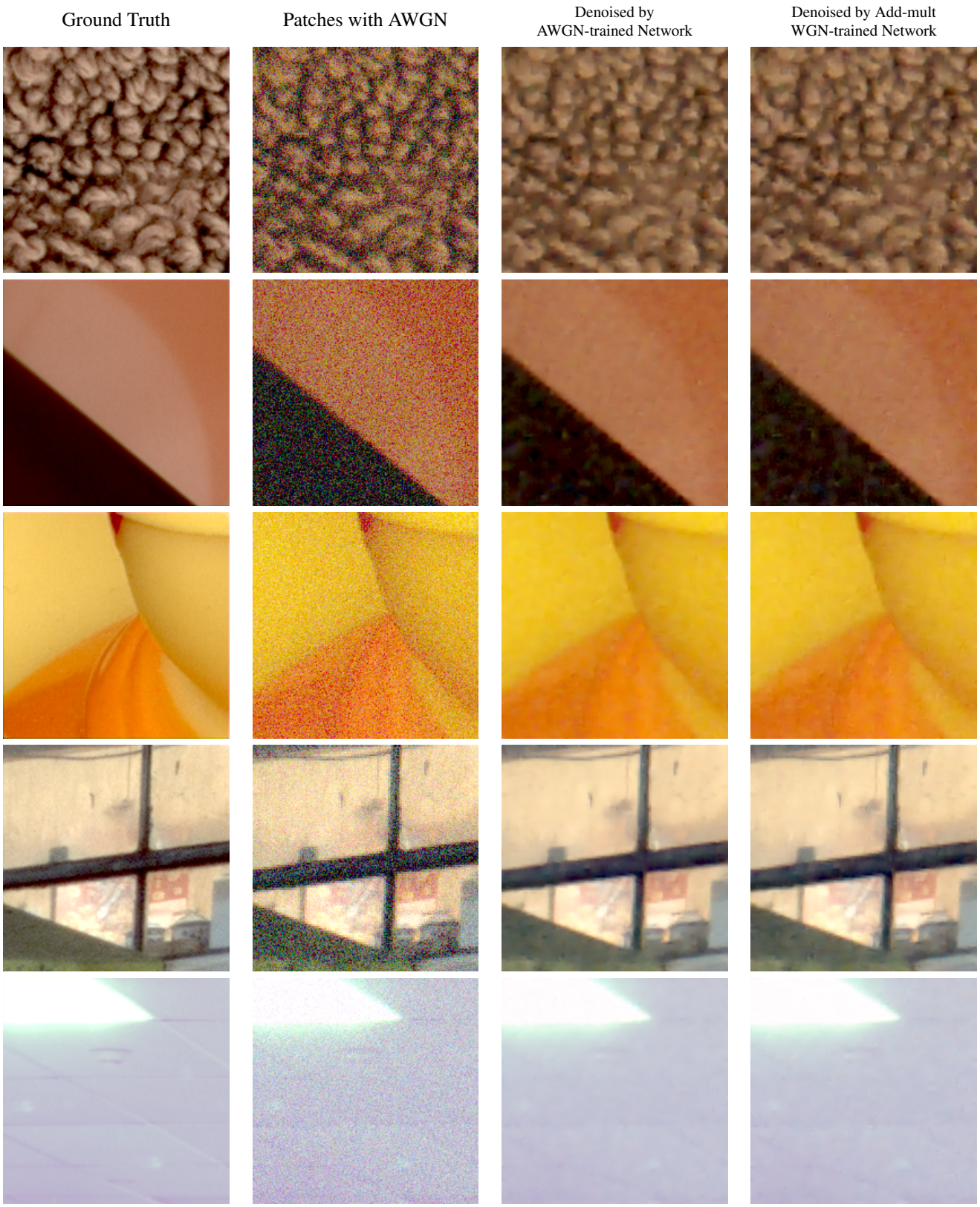
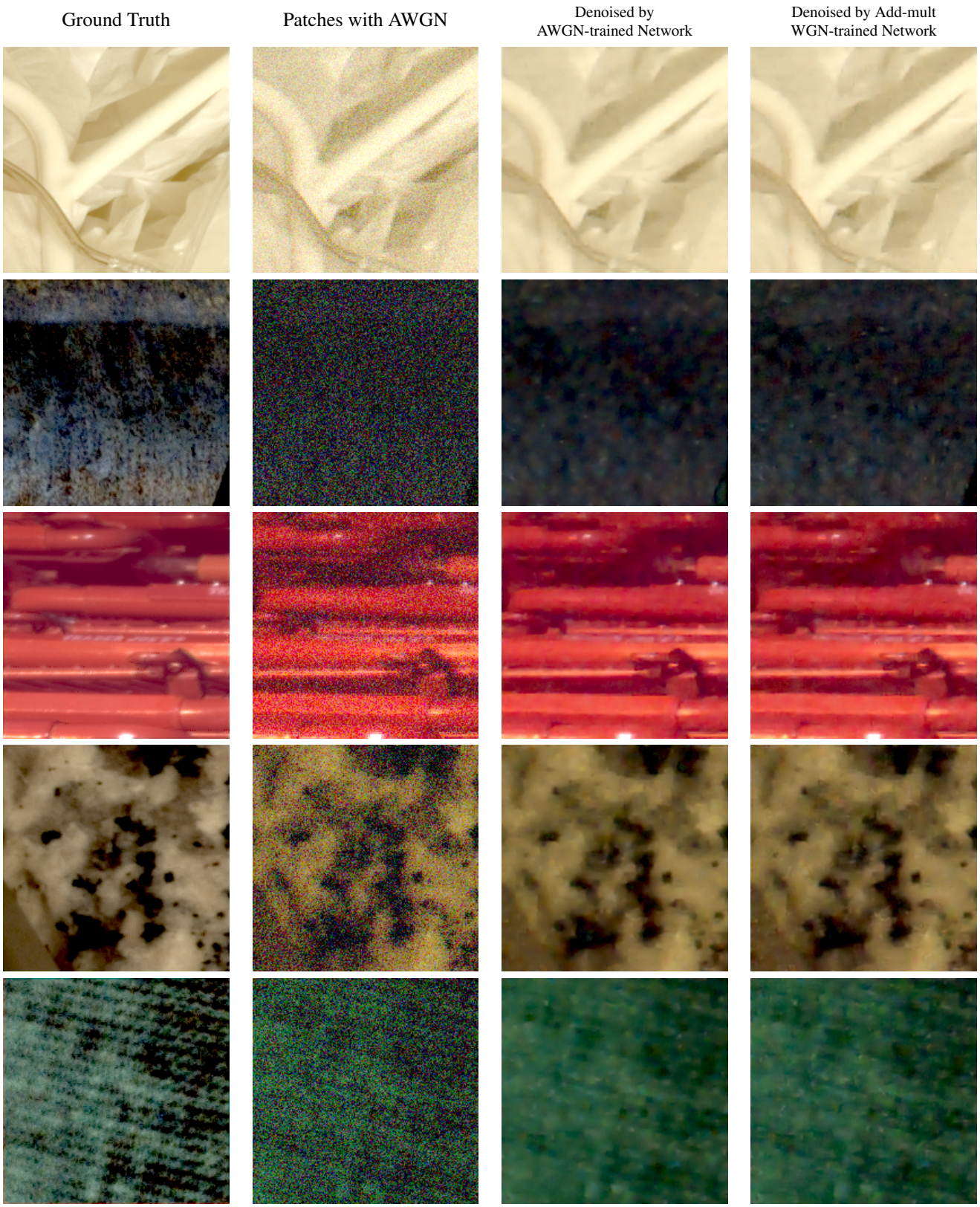


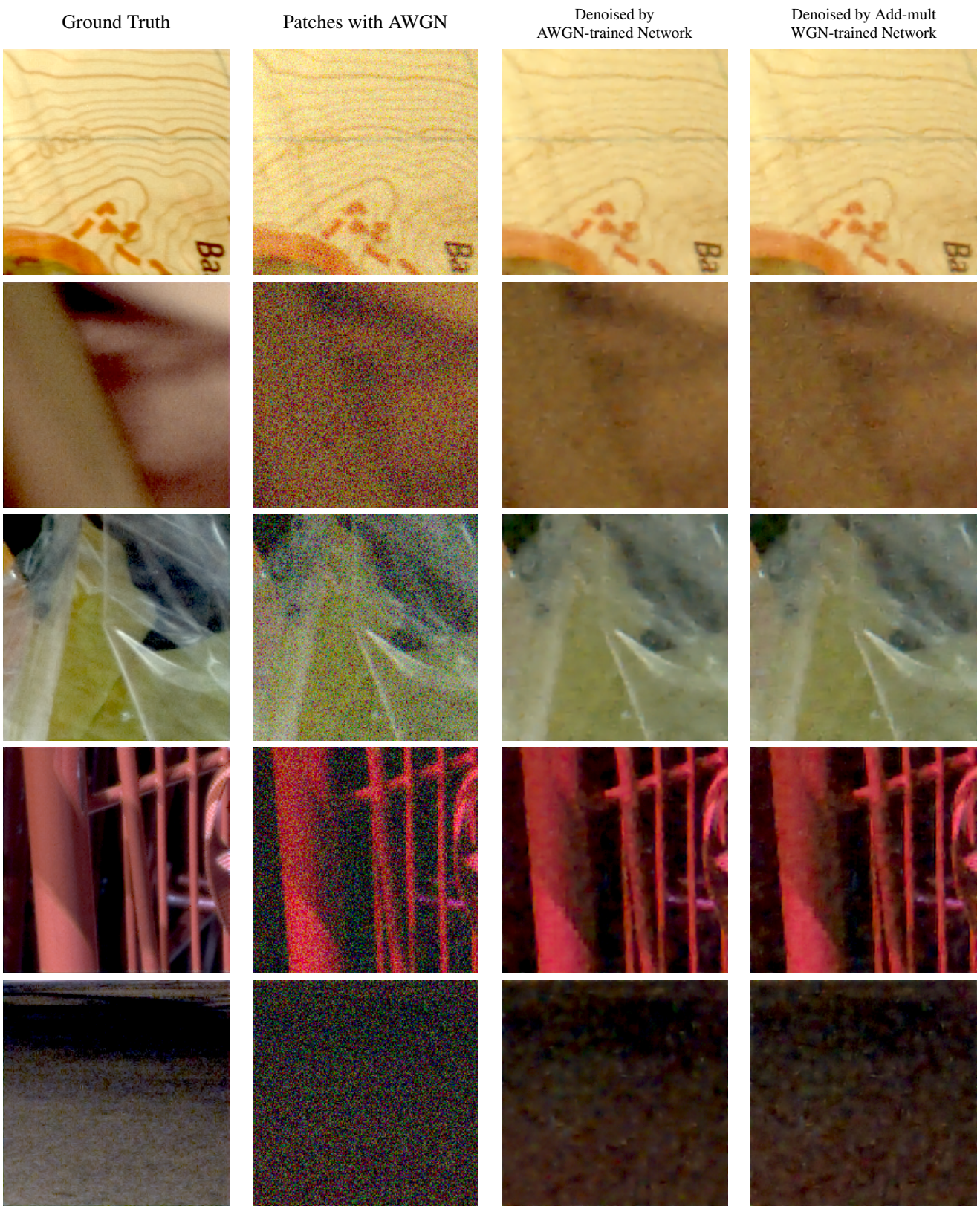
Testing AWGN Models on AWGN Patches (Main Paper's Fig. 8): iPhone 8 Test Data



Testing AWGN Models on AWGN Patches (Main Paper's Fig. 8): Pixel XL Test Data



Testing AWGN Models on AWGN Patches (Main Paper's Fig. 8): Pixel XL Test Data



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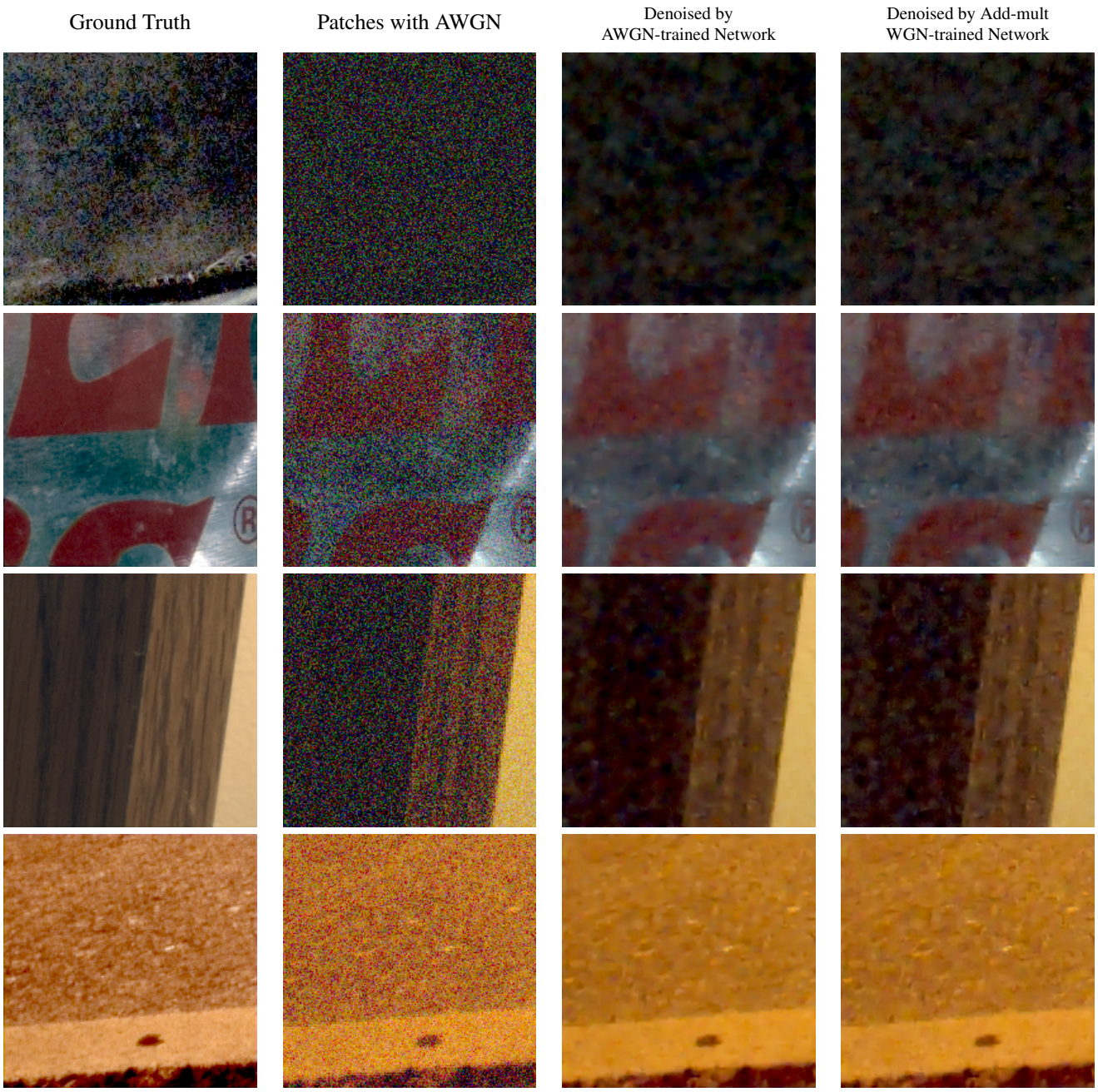
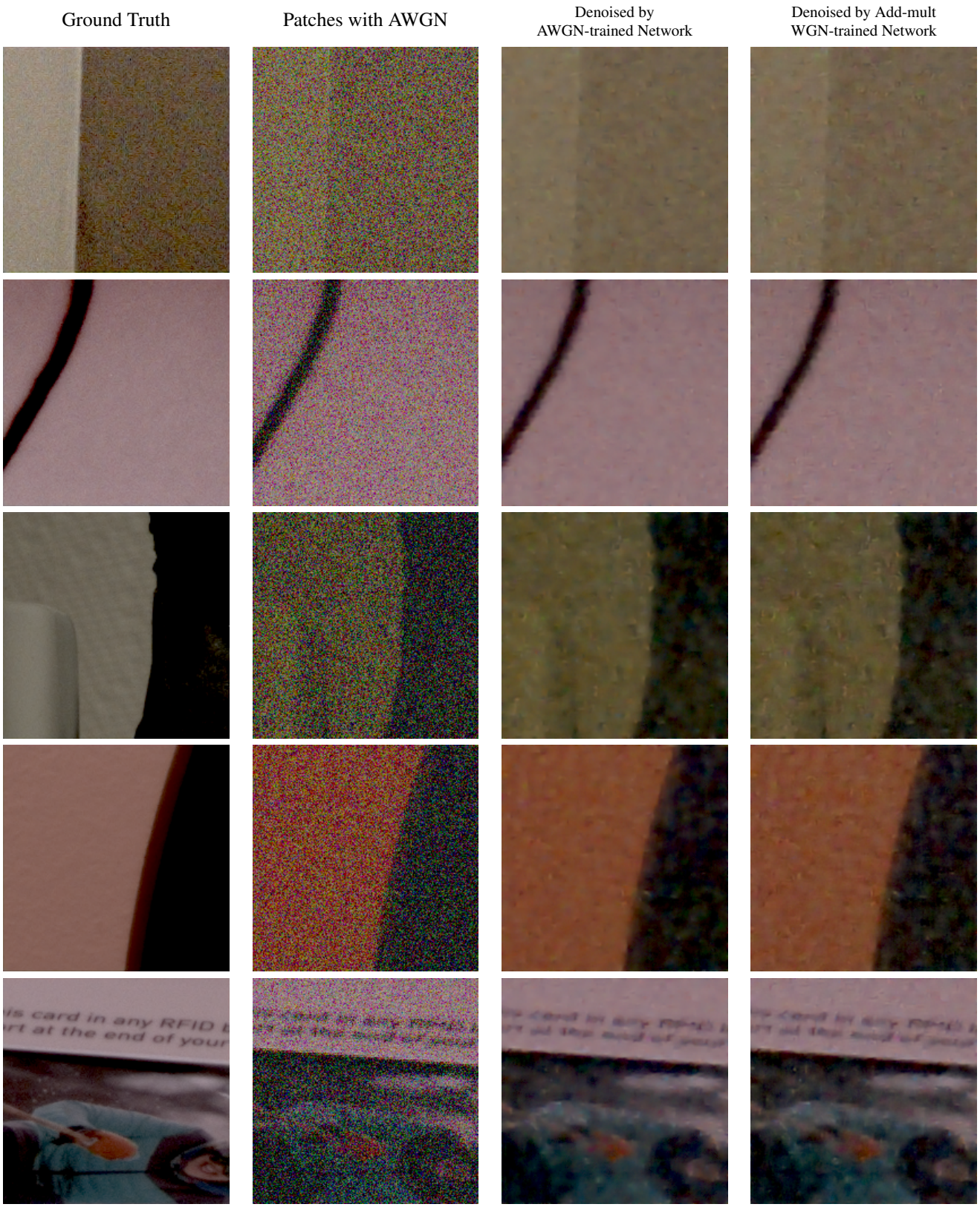
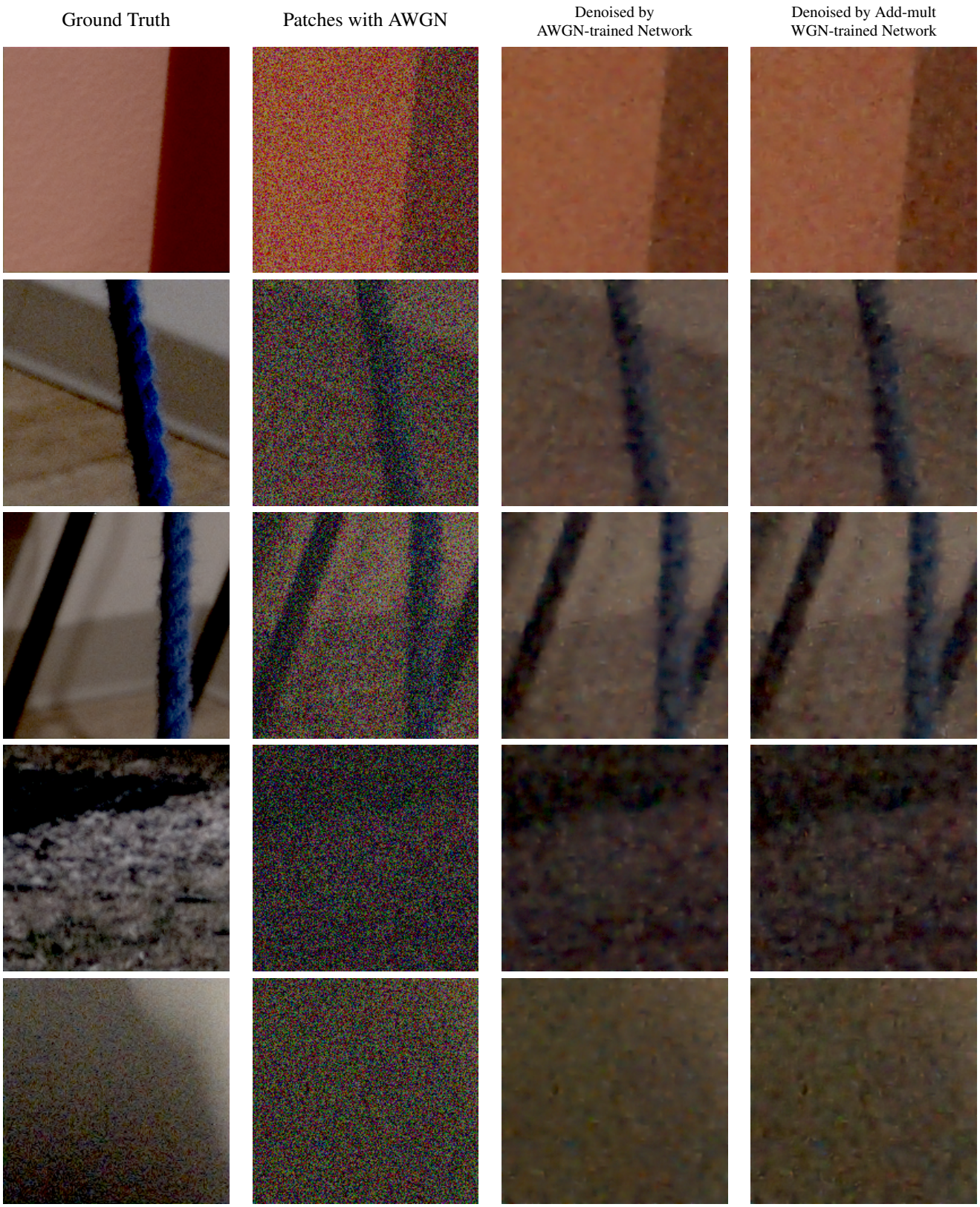


Testing AWGN Models on AWGN Patches (Main Paper's Fig. 8): Samsung Galaxy S7 Test Data



Testing AWGN Models on AWGN Patches (Main Paper's Fig. 8): Samsung Galaxy S7 Test Data



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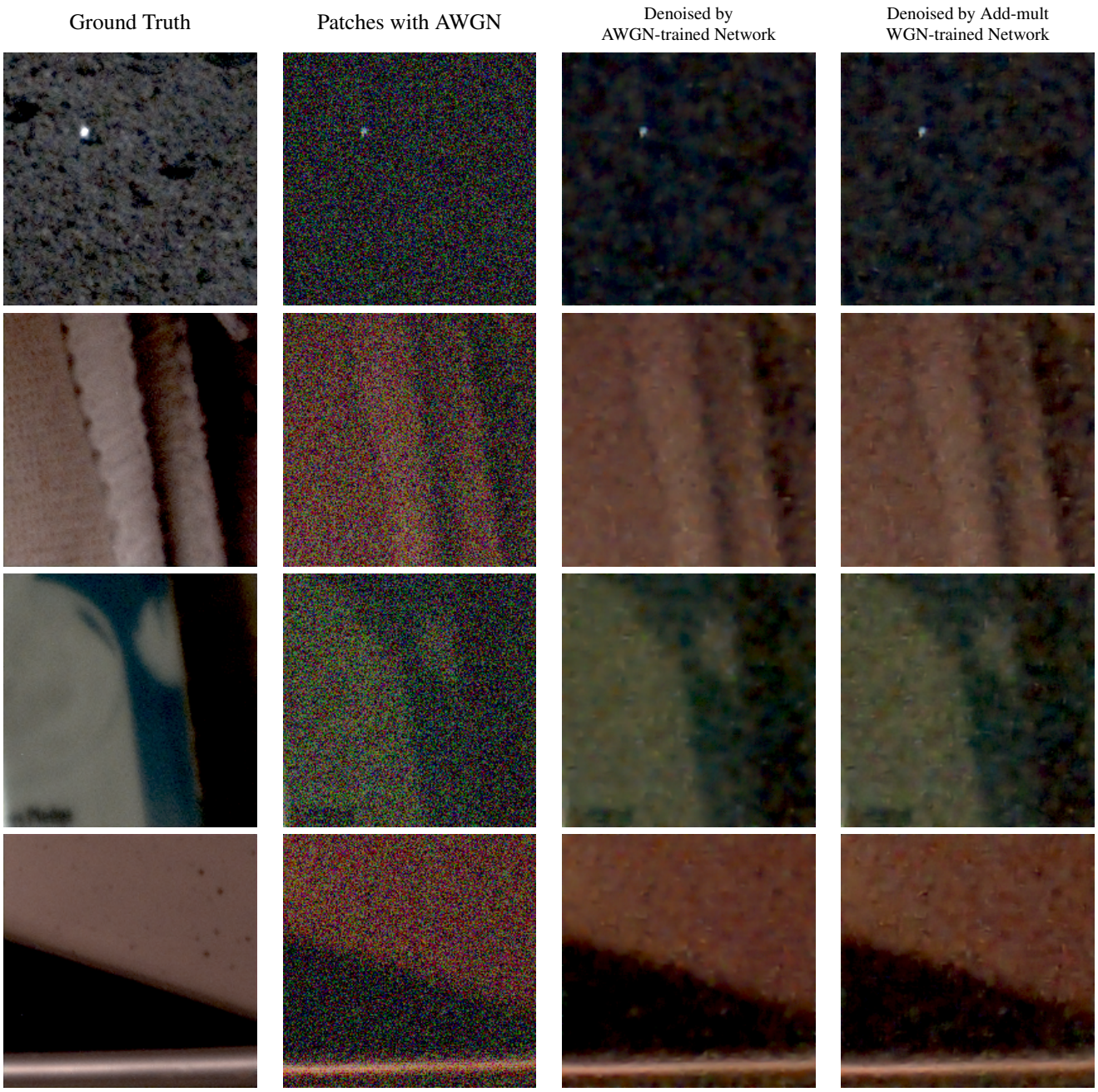
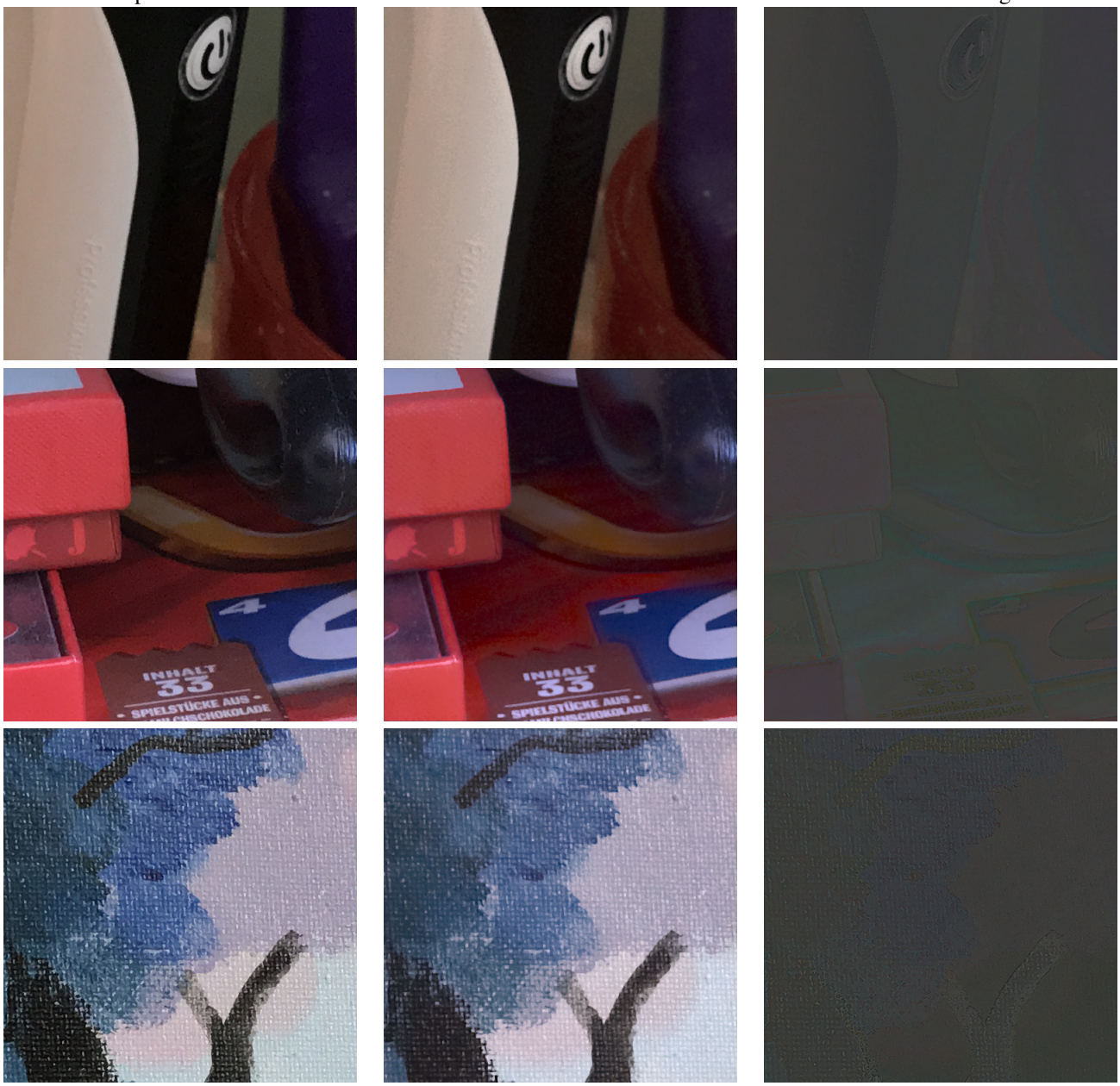


5. Additional Cellphone Simulation Results

This section supplements results shown in Fig. 4 in Section 3.2 of the main paper.

Matching Cellphone Camera Processing with Our Pipeline (Main Paper's Fig. 4): iPhone 7 Simulation

Cellphone's JPEG	Our Simulation	Difference Image



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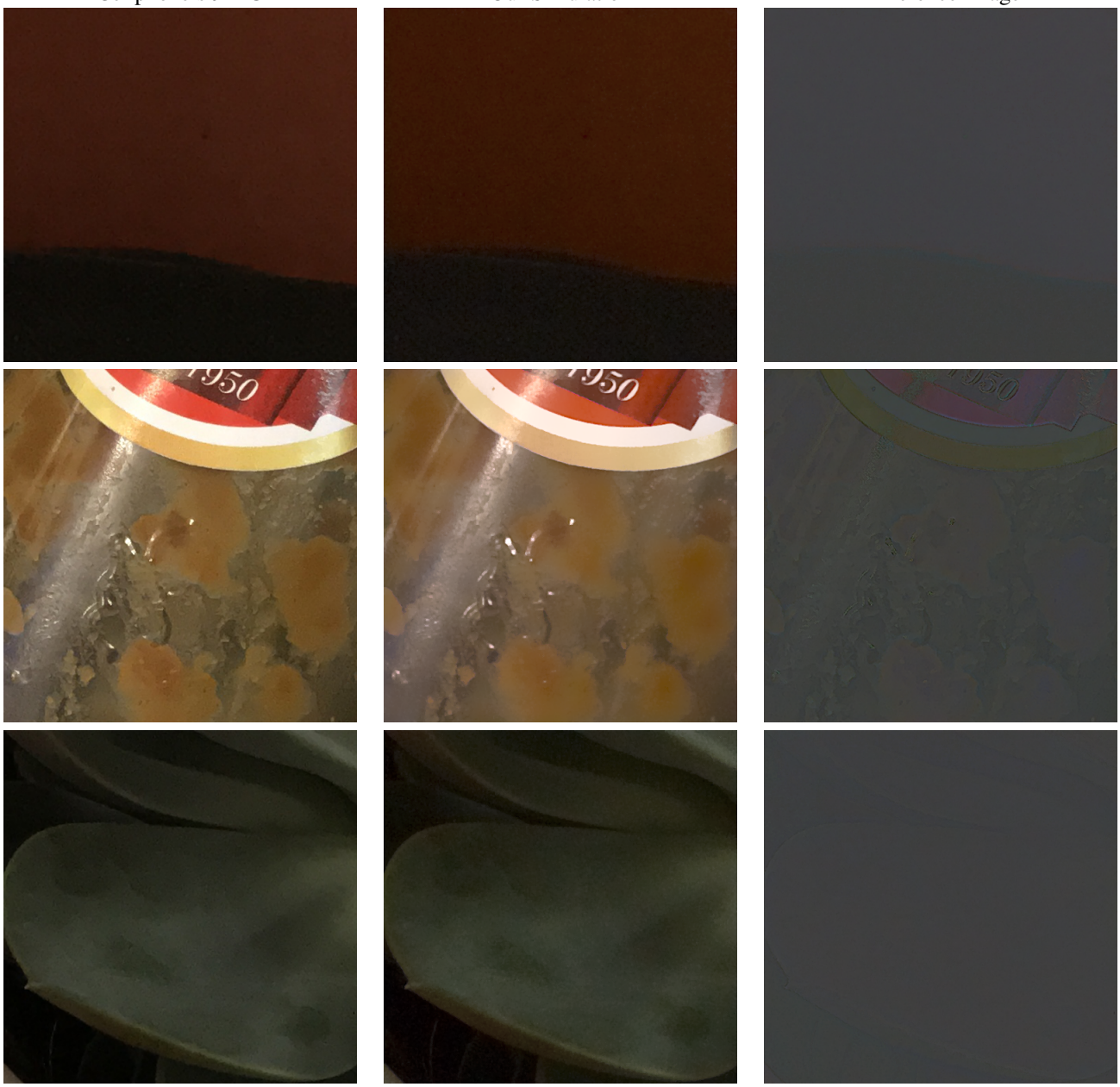
Cellphone's JPEG	Our Simulation	Difference Image

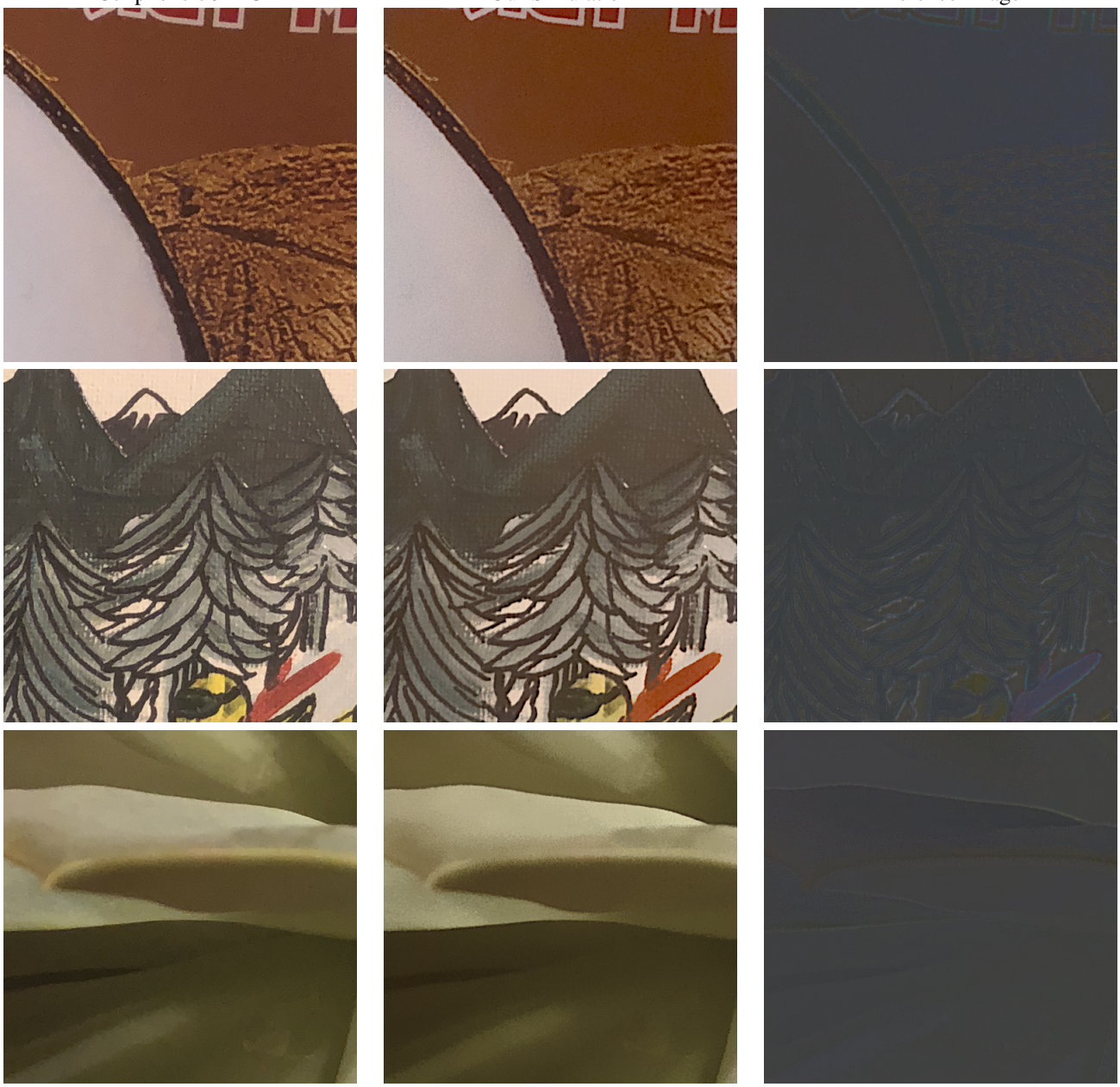


Matching Cellphone Camera Processing with Our Pipeline (Main Paper's Fig. 4): iPhone 7 Simulation

Cellphone's JPEG	Our Simulation	Difference Image

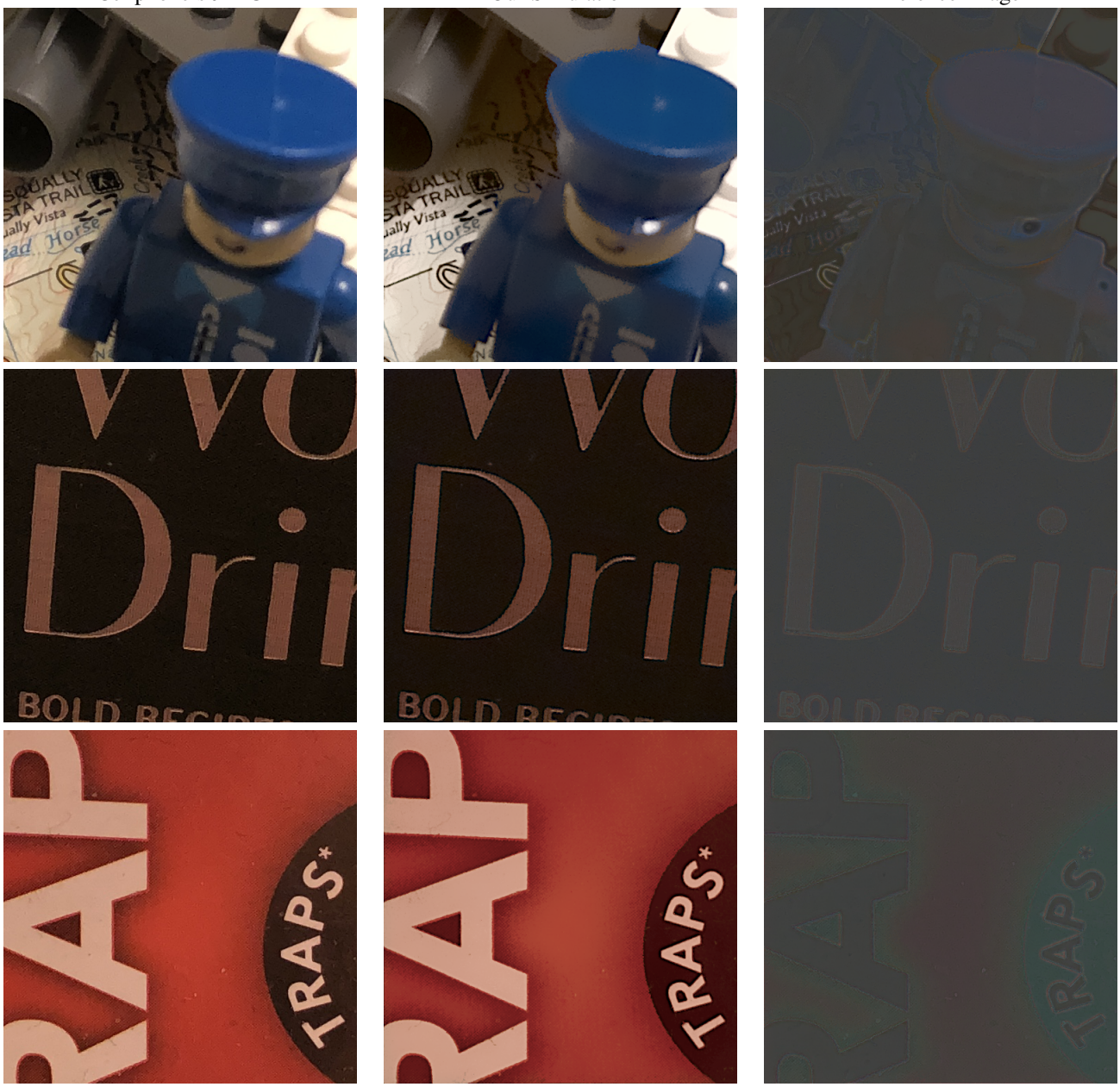
Matching Cellphone Camera Processing with Our Pipeline (Main Paper's Fig. 4): iPhone 8 Simulation

Cellphone's JPEG	Our Simulation	Difference Image



Matching Cellphone Camera Processing with Our Pipeline (Main Paper's Fig. 4): iPhone 8 Simulation

Cellphone's JPEG	Our Simulation	Difference Image



Matching Cellphone Camera Processing with Our Pipeline (Main Paper's Fig. 4): iPhone 8 Simulation

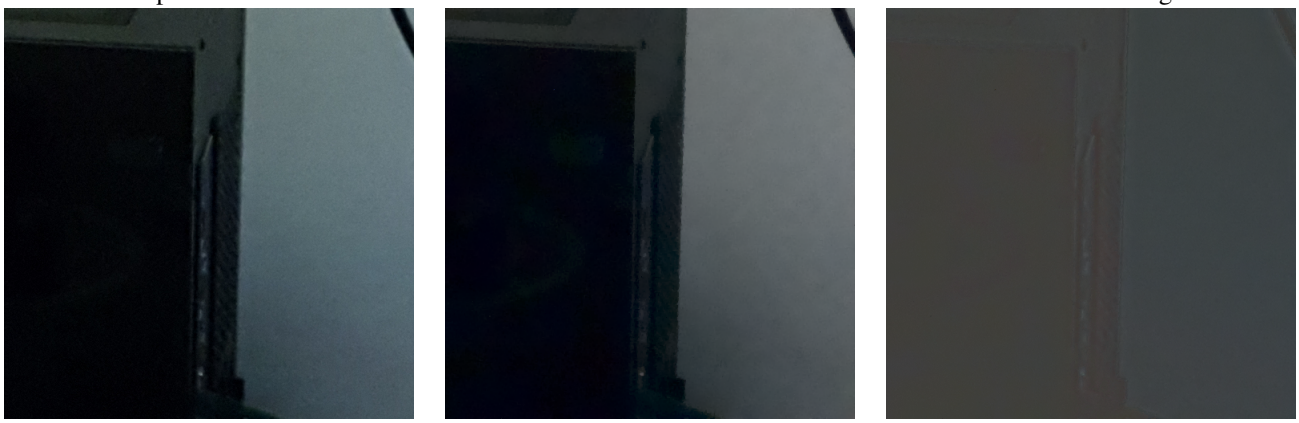
Cellphone's JPEG	Our Simulation	Difference Image

Matching Cellphone Camera Processing with Our Pipeline (Main Paper's Fig. 4): iPhone 8 Simulation

Cellphone's JPEG	Our Simulation	Difference Image

Matching Cellphone Camera Processing with Our Pipeline (Main Paper's Fig. 4): Samsung Galaxy S7 Simulation

Cellphone's JPEG	Our Simulation	Difference Image



Matching Cellphone Camera Processing with Our Pipeline (Main Paper's Fig. 4): Samsung Galaxy S7 Simulation

Cellphone's JPEG	Our Simulation	Difference Image

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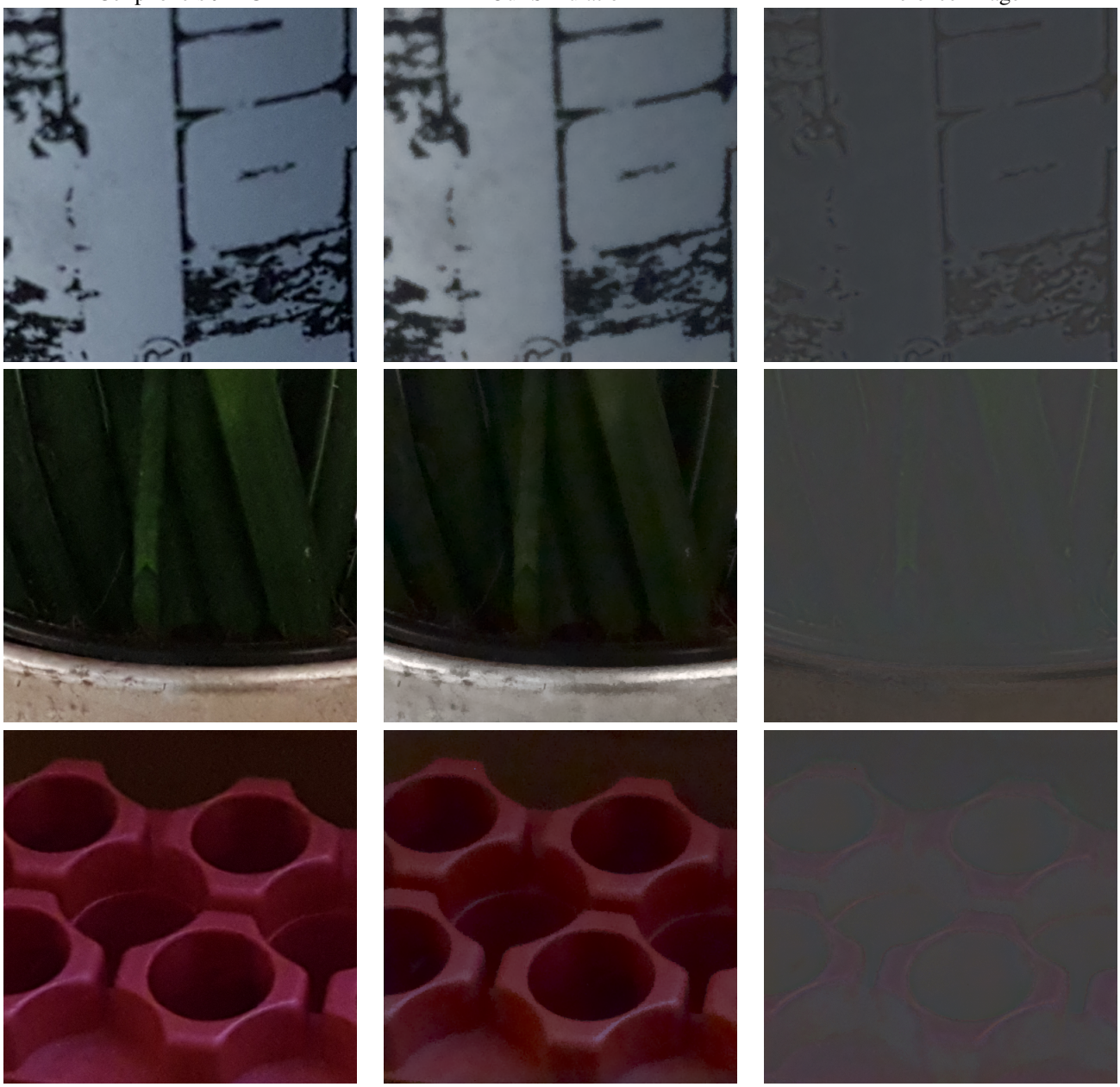

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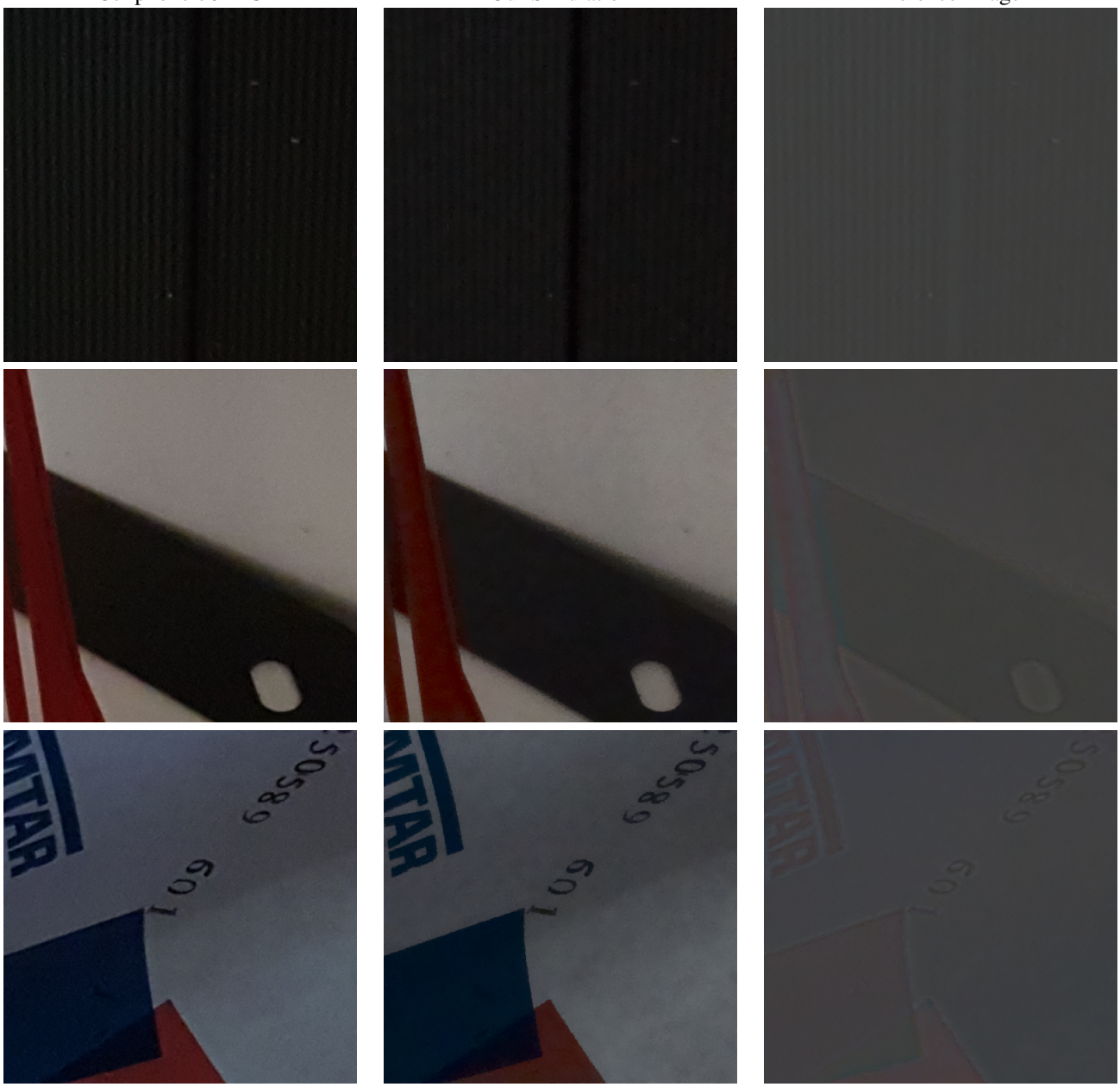
Cellphone's JPEG	Our Simulation	Difference Image



Matching Cellphone Camera Processing with Our Pipeline (Main Paper's Fig. 4): Samsung Galaxy S7 Simulation

Cellphone's JPEG	Our Simulation	Difference Image

References

[1] R. H. Hibbard. Apparatus and method for adaptively interpolating a full color image utilizing luminance gradients, Jan. 17 1995. US Patent 5,382,976. 14, 15, 16, 17, 18, 19

[2] K. Hirakawa and T. W. Parks. Adaptive homogeneity-directed demosaicing algorithm. *IEEE Transactions on Image Processing*, 14(3):360–369, 2005. 14, 15, 16, 17, 18, 19