

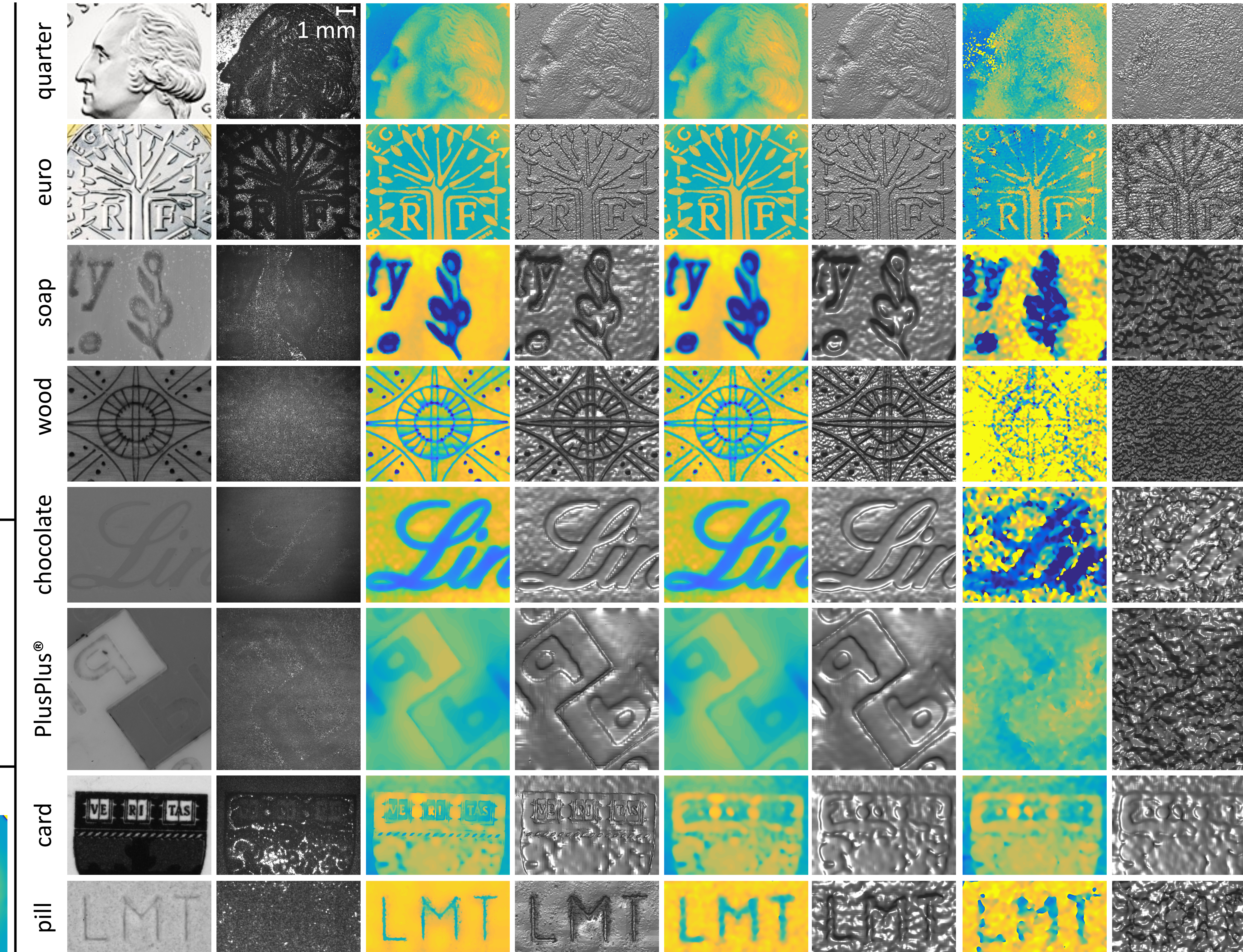
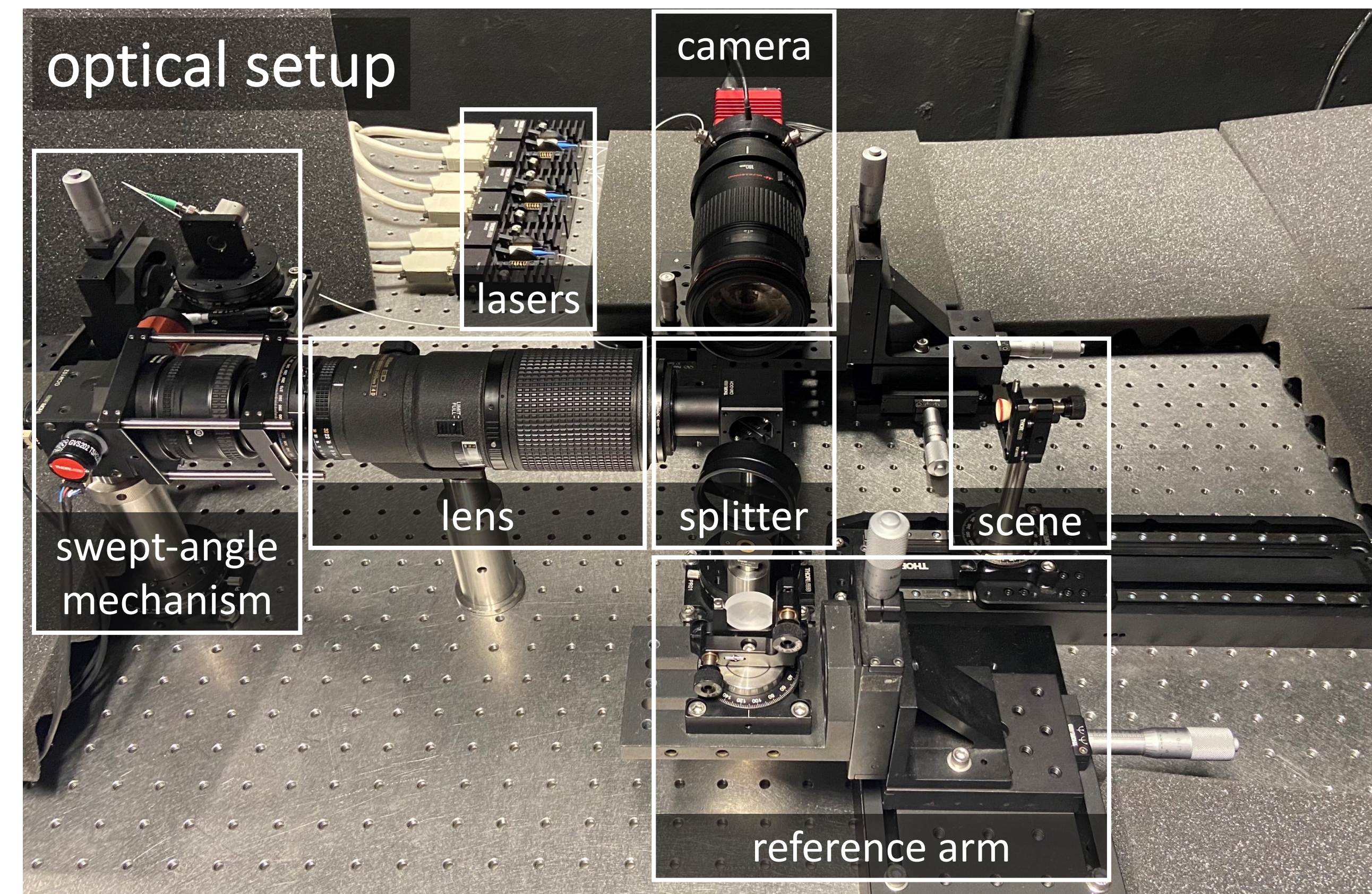
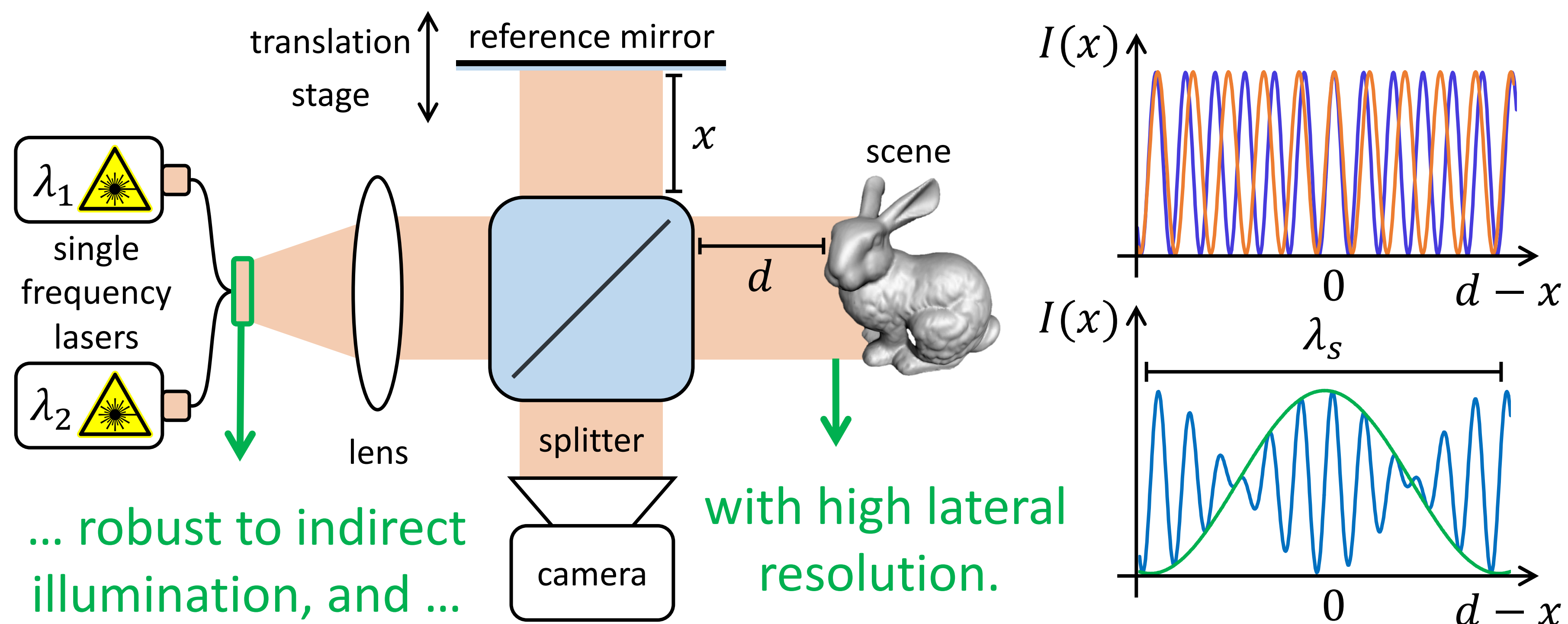


# Swept-Angle Synthetic Wavelength Interferometry

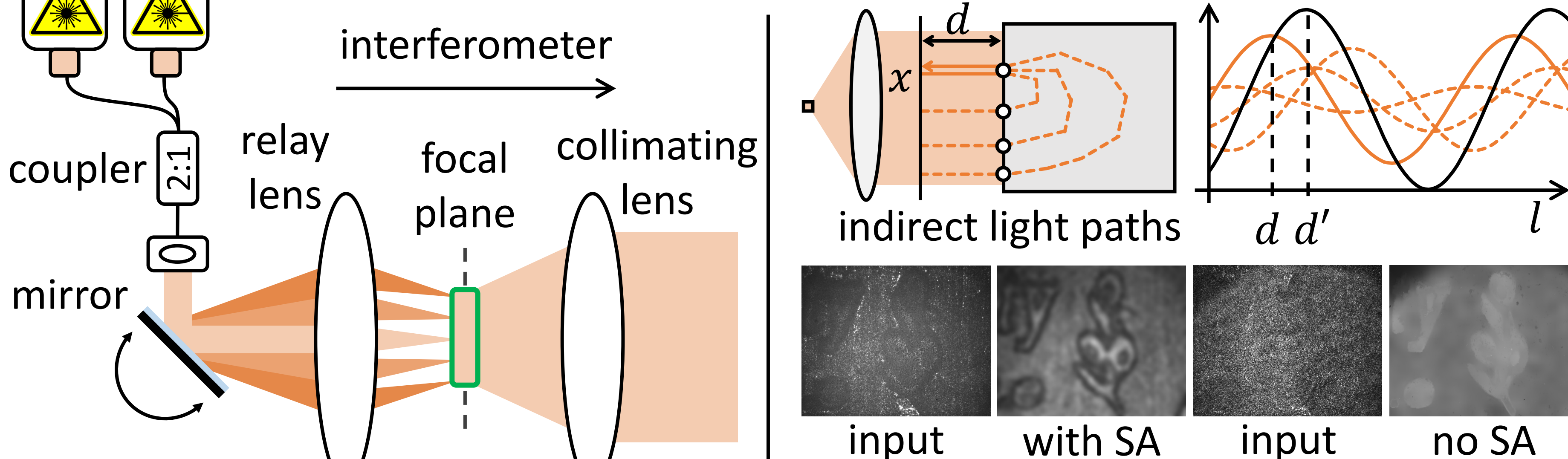
Alankar Kotwal, Anat Levin, Ioannis Gkioulekas | [imaging.cs.cmu.edu/swept\\_angle\\_swi](http://imaging.cs.cmu.edu/swept_angle_swi)



Our aim: fast, full-field depth acquisition ...

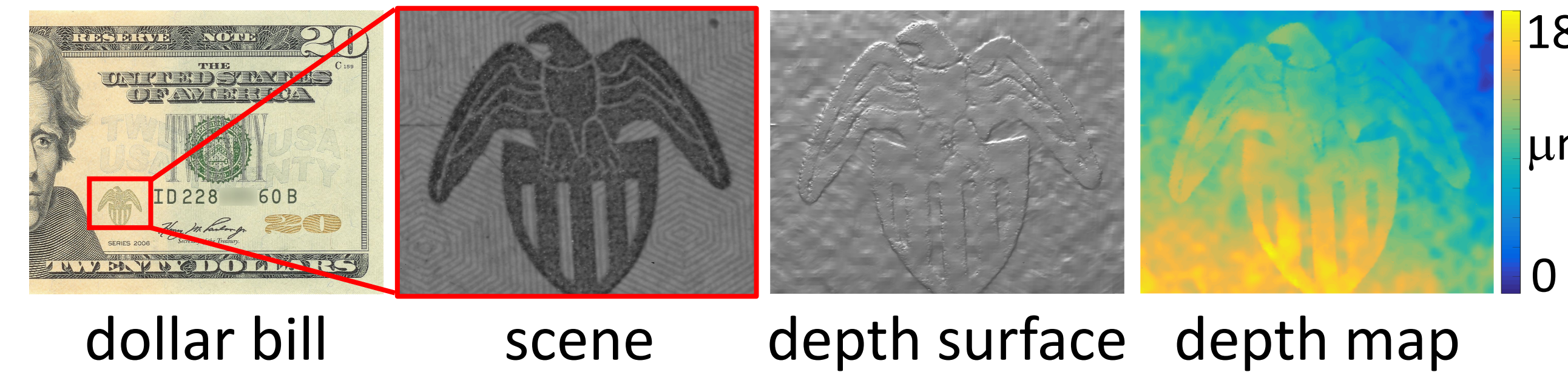


Our approach: swept-angle scanning for direct-only imaging

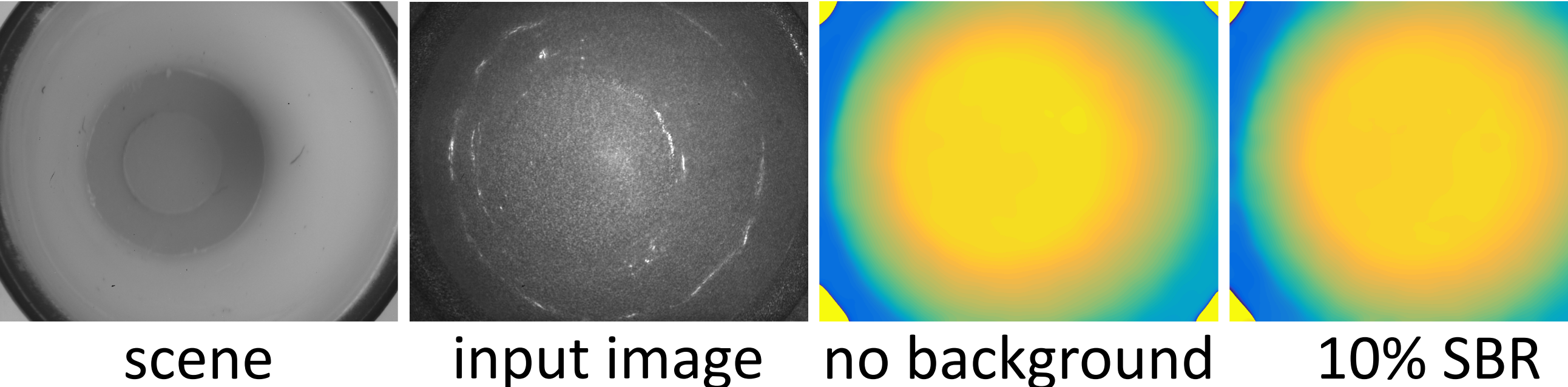


- ✓ axial resolution 1 μm – 10 μm
- ✓ depth range 1 mm – 1 cm
- ✓ lateral resolution 5 μm – 30 μm
- ✓ field of view 1 cm × 1 cm

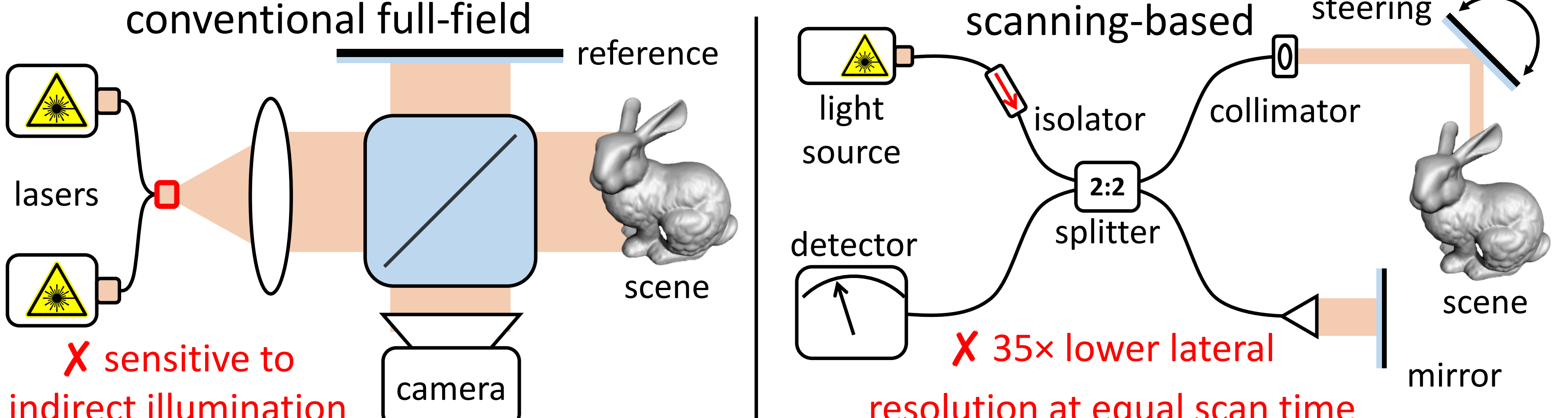
high lateral- and axial- resolution depth



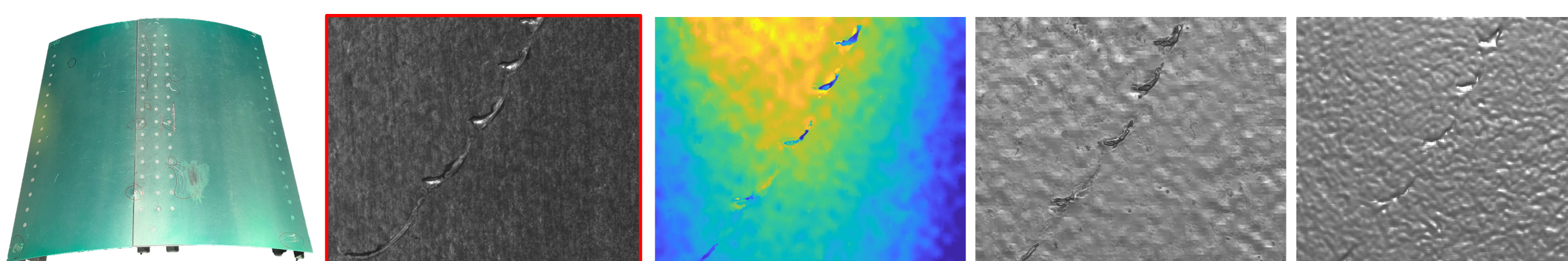
robustness to ambient light and other indirect illumination



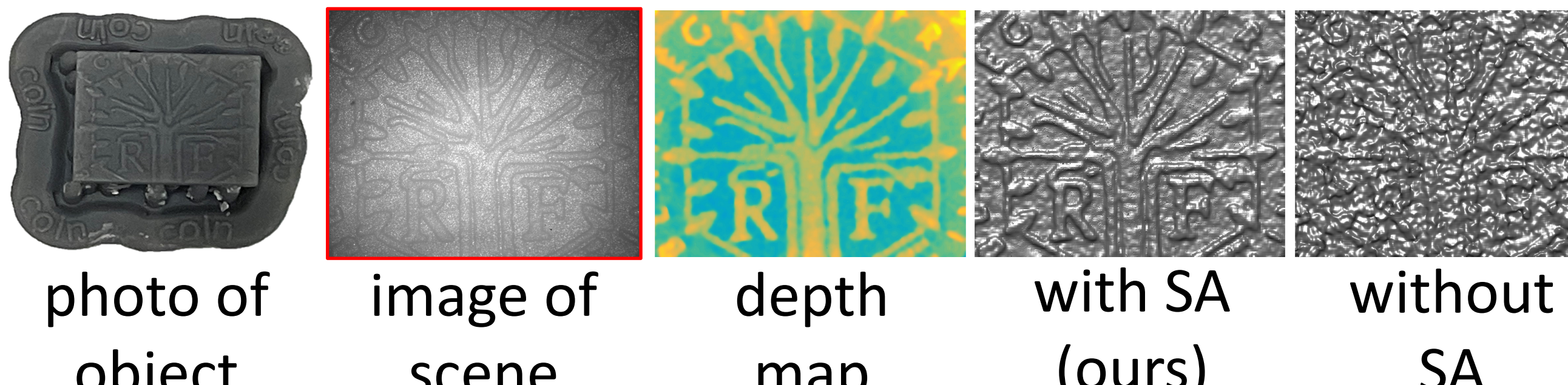
alternative approaches



applications inspecting airplane fuselage section



feedback during precision fabrication



depth range: 1 mm, depth resolution: 1 μm

depth range: 1 cm, depth resolution: 10 μm

