

Estimating the Natural Illumination Conditions from a Single Outdoor Image

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Code & data
online soon!

<http://graphics.cs.cmu.edu/projects/outdoorIllumination>

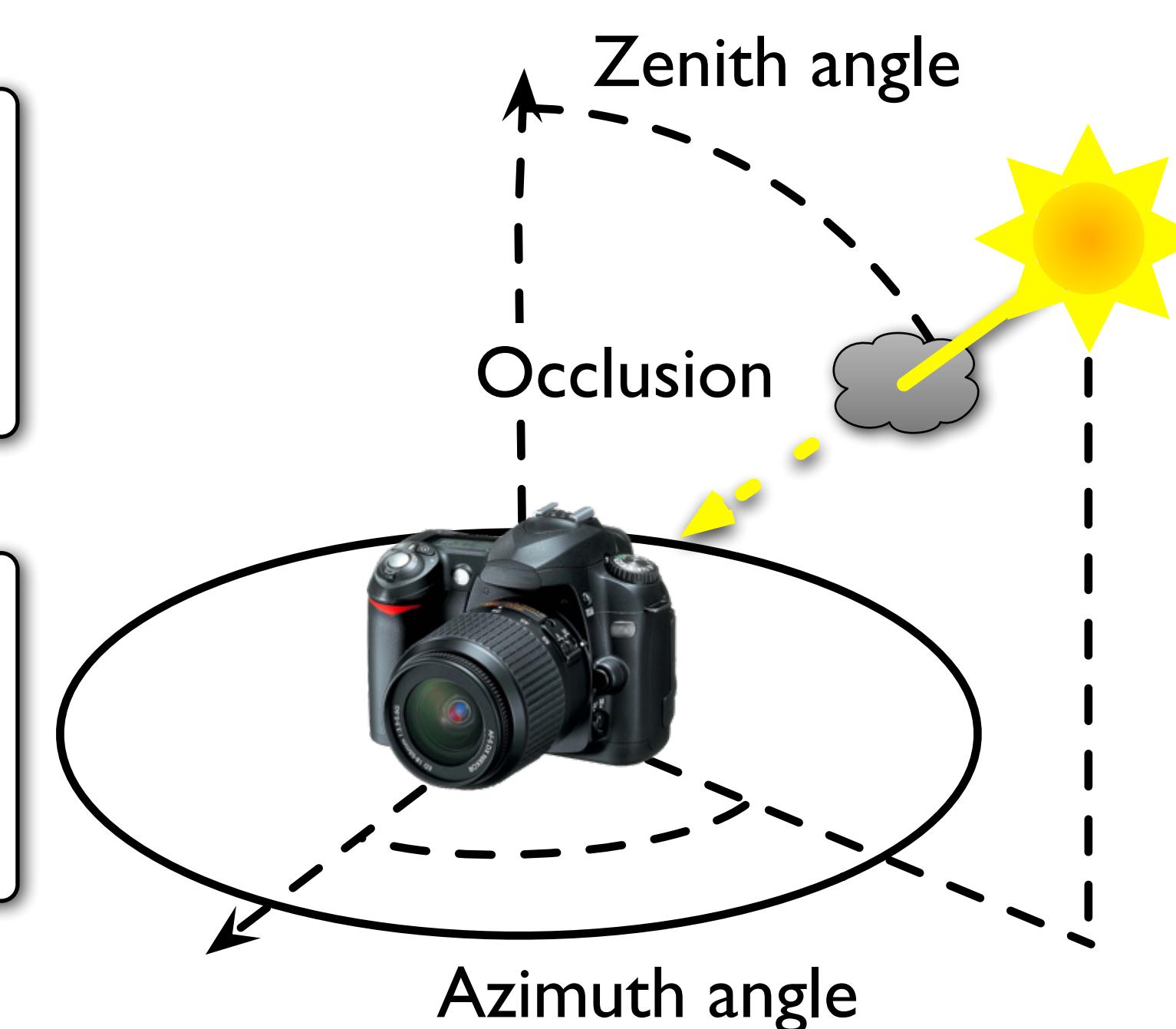
Natural illumination is beautiful...



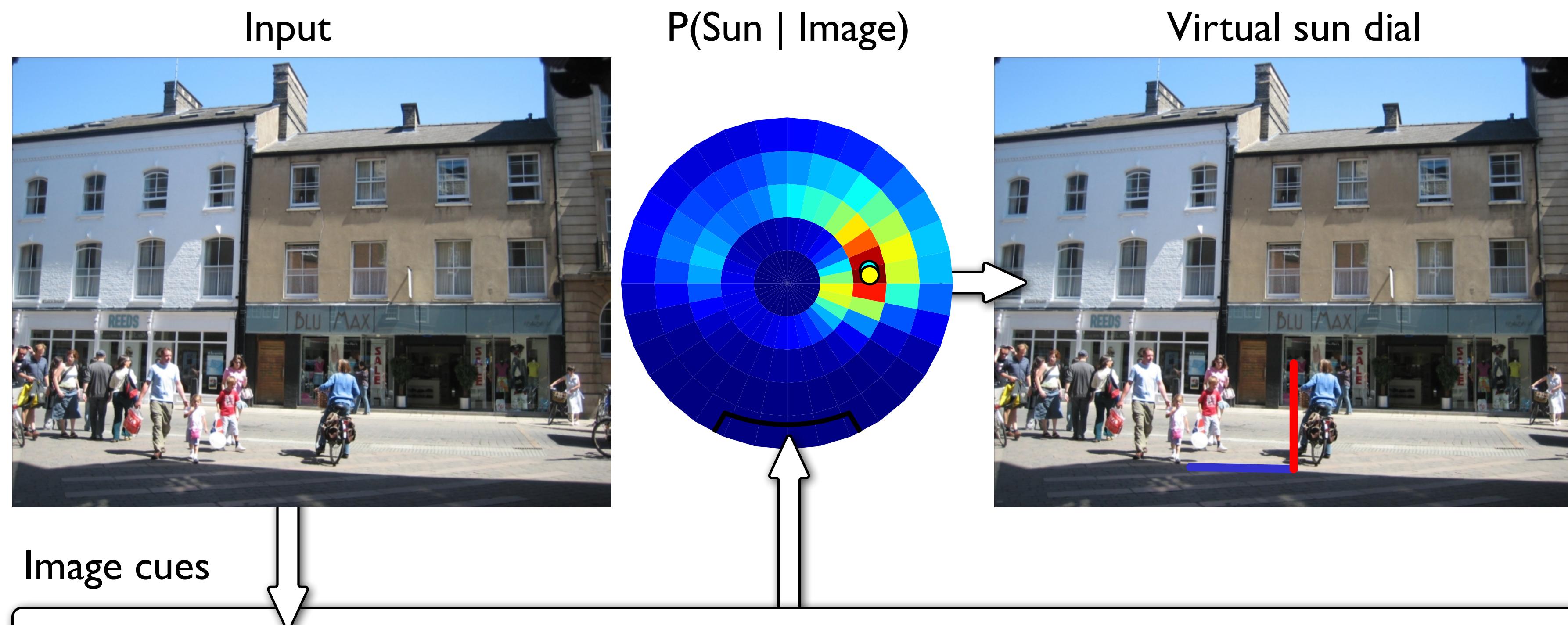
... but hard to deal with.

Insight: exploit effects of illumination on images

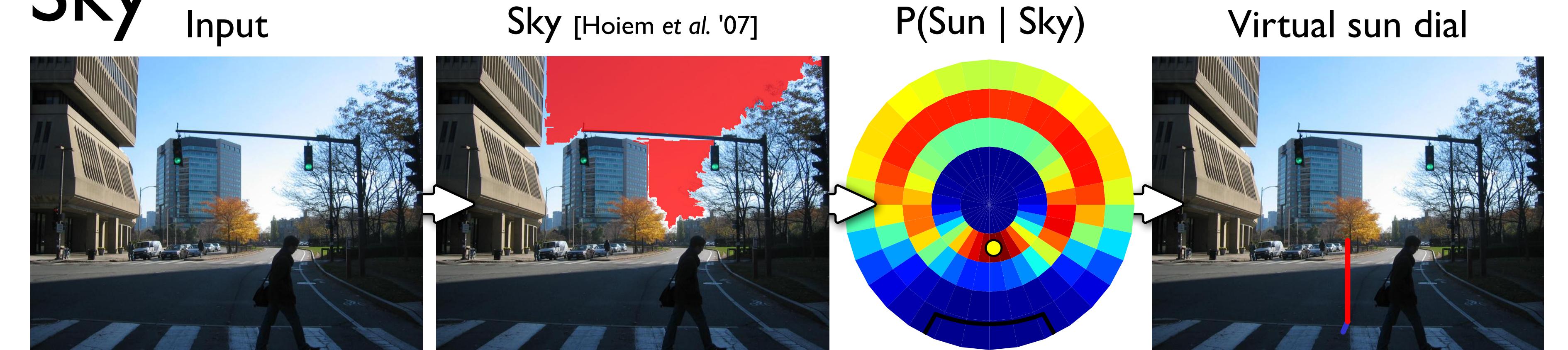
Goal: estimate lighting model from a single image



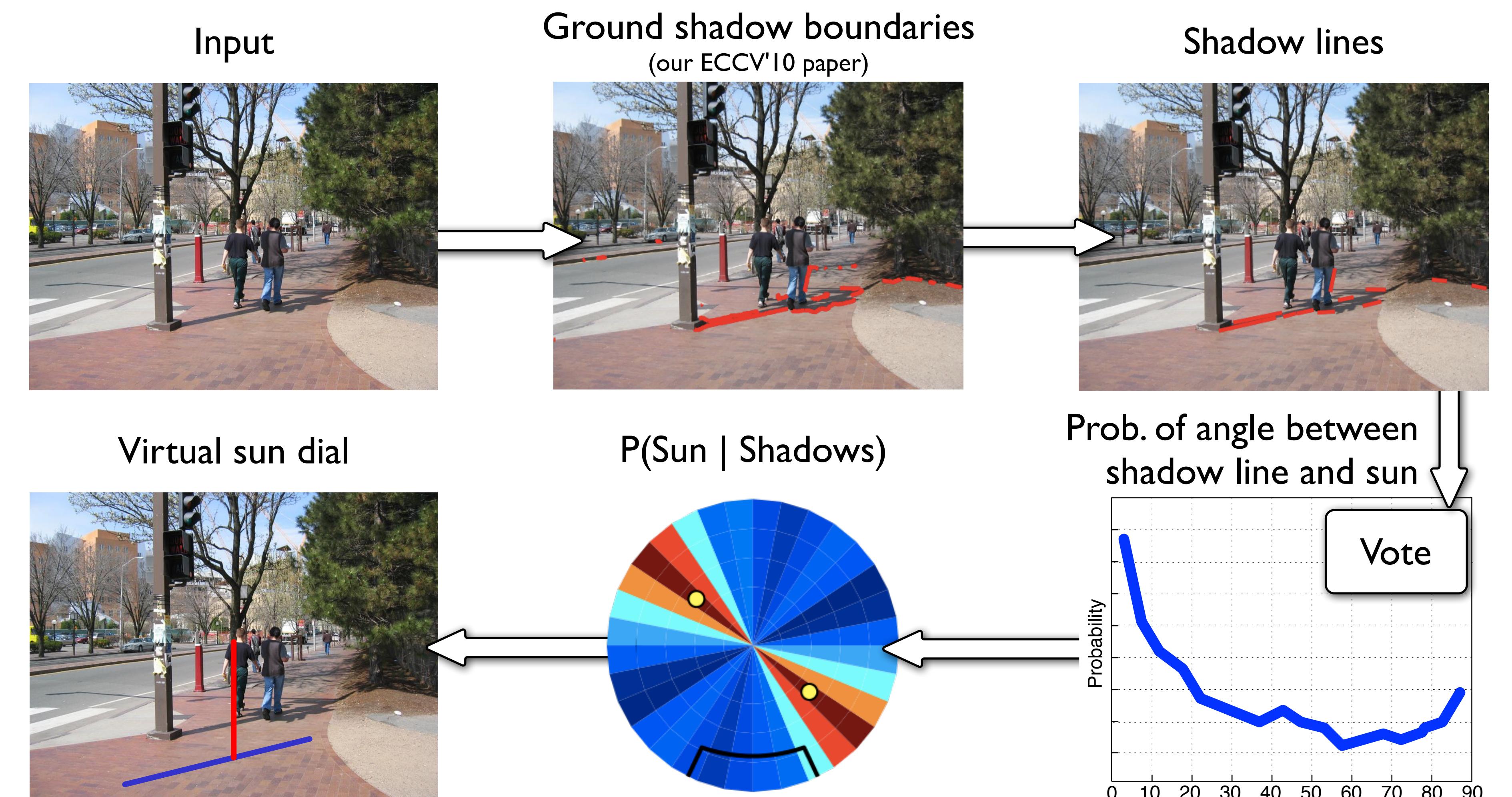
Estimating illumination conditions



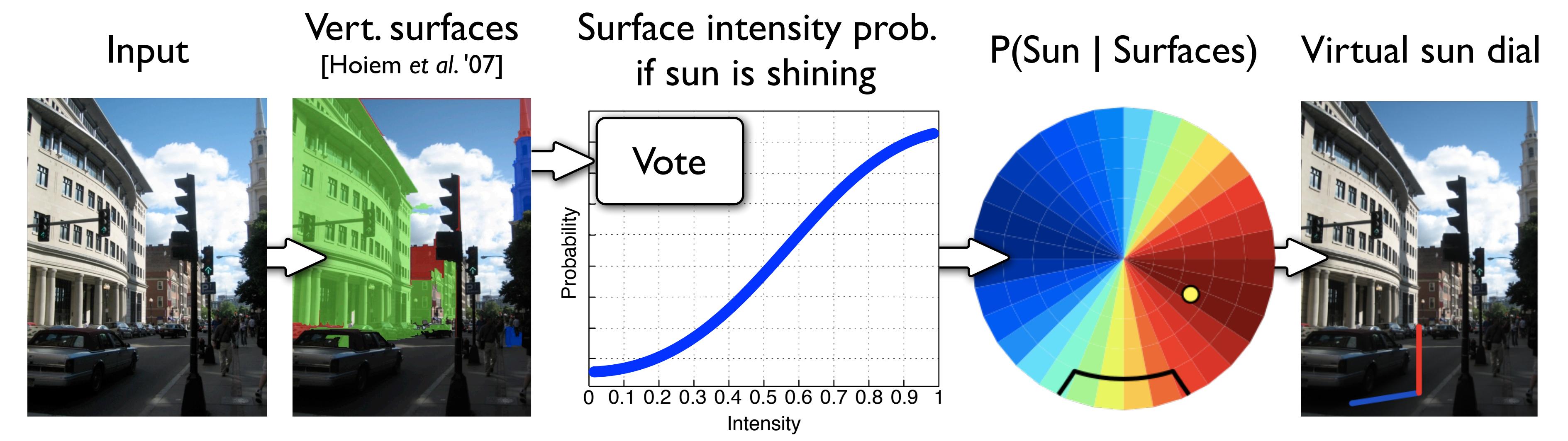
Sky



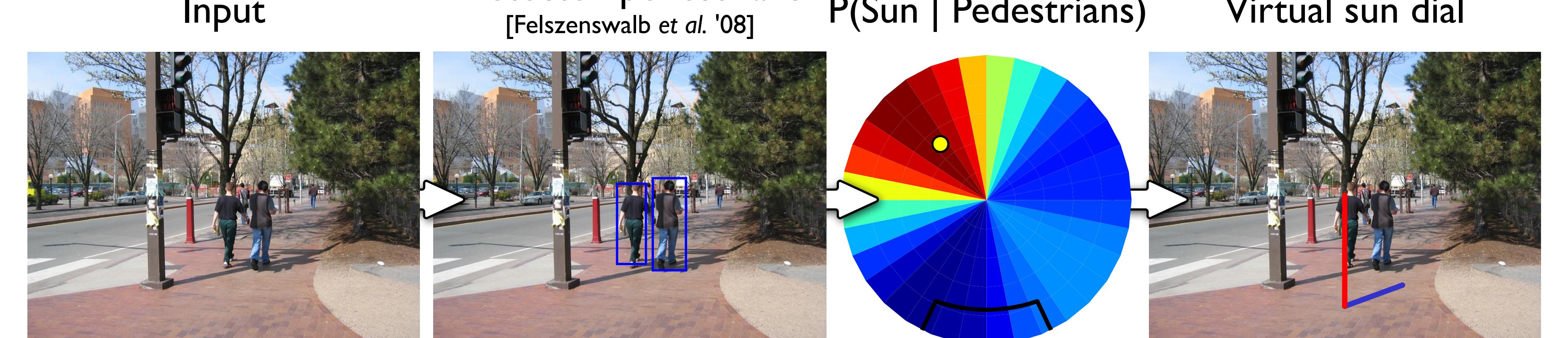
Shadows



Vertical surfaces

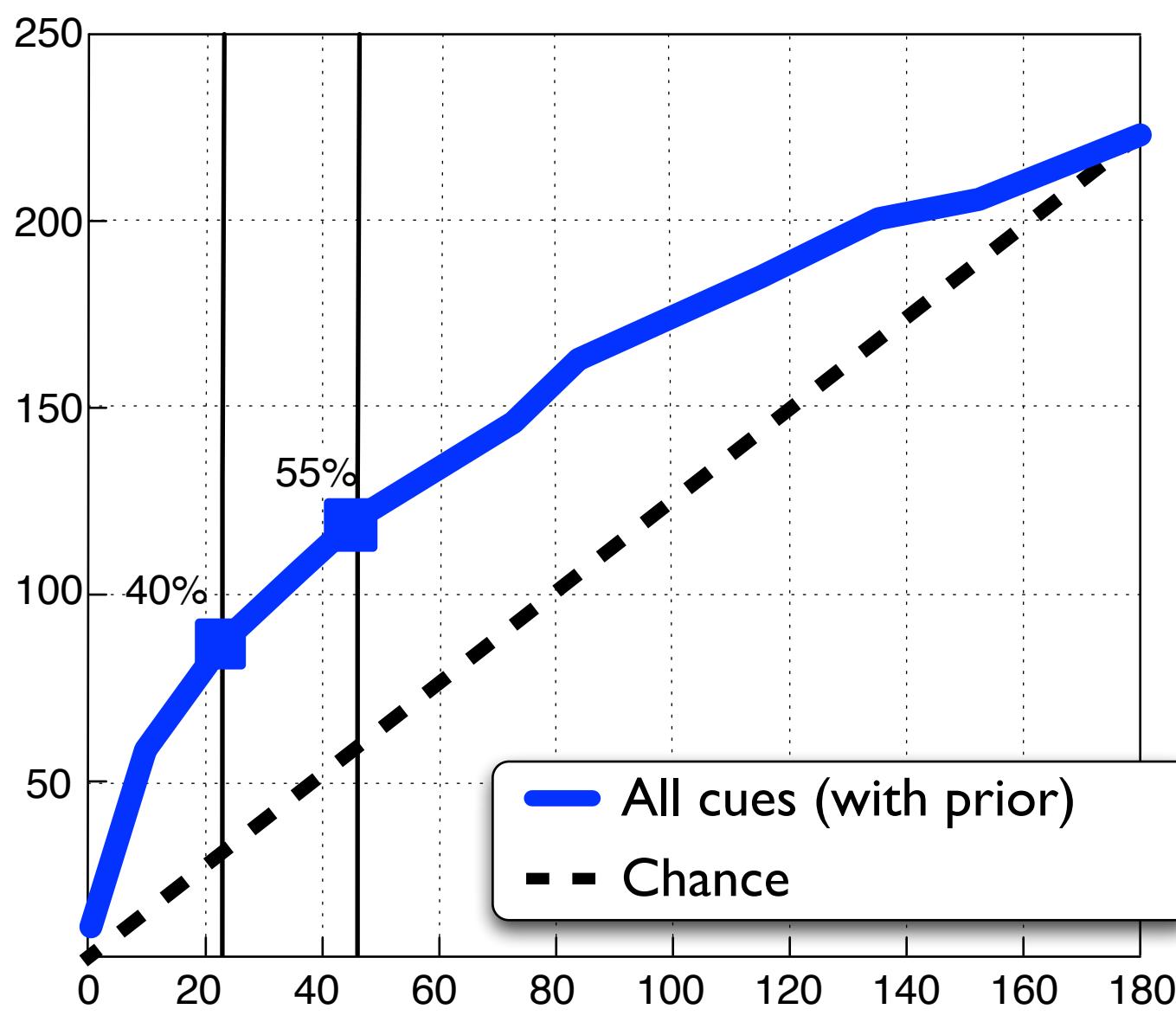


Pedestrians

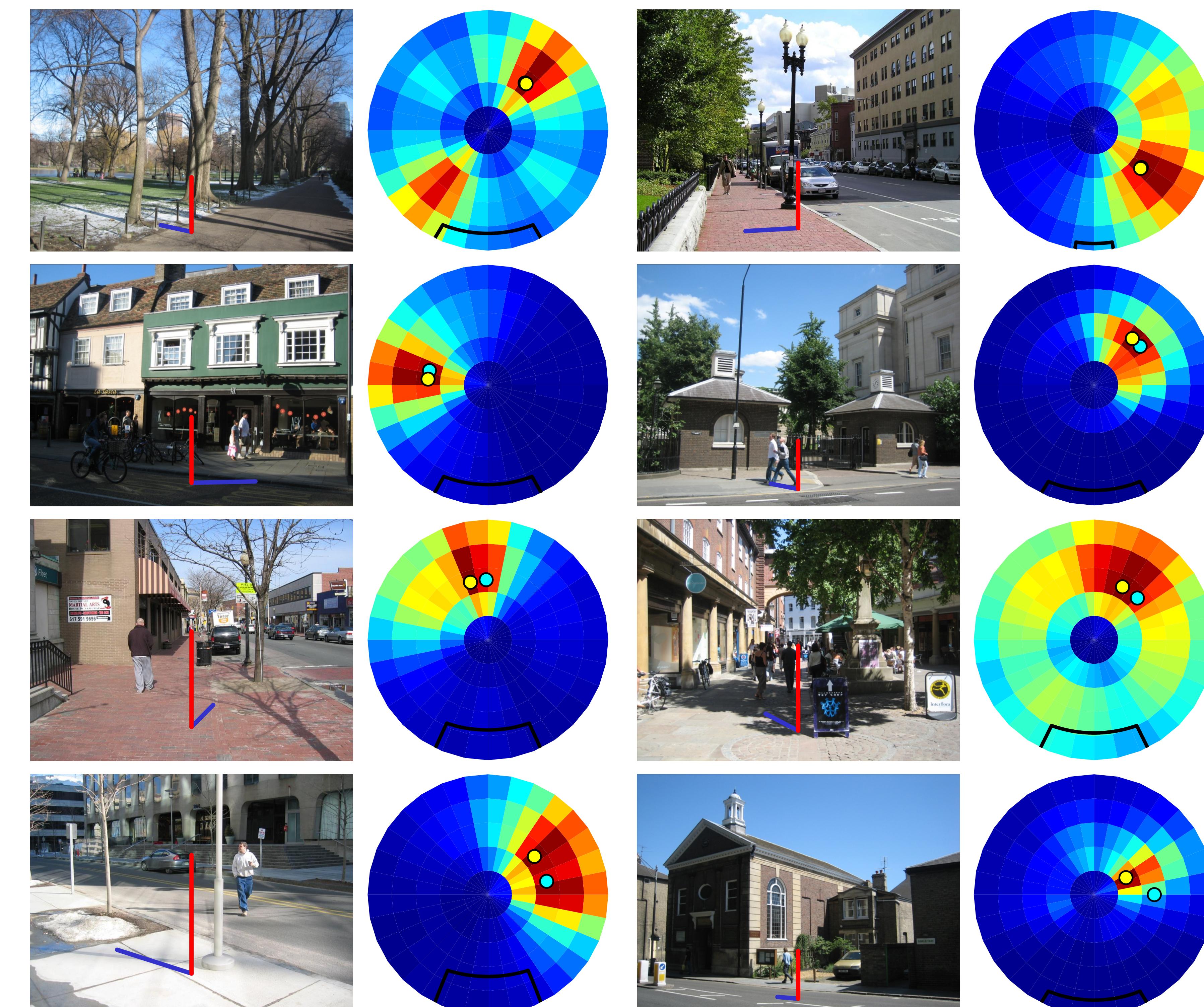


Quantitative evaluation

- 239 images from LabelMe [Russell et al. '08]
- Sun azimuth only
- All cues with prior



Qualitative evaluation



Application: 3-D object relighting

