A04a Off-axis Telescope Concepts for Future High Dynamic Range Astronomy

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An opportunity exists to exploit the advances in mirror fabrication that now allows large off-axis telescopes to be constructed for the first time. Off-axis telescopes offer the advantages of higher throughput, low scattered light, and optimized pupil for adaptive optics. A main science driver is the detection of planets and circumstellar material near bright stars. Various instrumental techniques are being tried currently to suppress the scattered light from the bright star, including the use of a dual wavelength coronagraph and dual-beam polarization coronagraph. It is timely to consider a development program starting with modest aperture telescopes to 20-meter class telescopes to space observatories, all utilizing off-axis primary mirrors.