

The Band-Arc Telescope.

Results from this work have been highly successful, resulting in what is possibly a new design for very-high-resolution telescopes. Here is the original brief:

Modern large astronomical telescopes depend on light being reflected from a large circular mirror onto a small secondary mirror and thence to an eyepiece or camera. Calculations are wanted for the optics of conformation of the secondary mirror of a band-arc telescope. Here the primary mirror is simply a relatively narrow flat arc of circular or parabolic cross-section, and the secondary mirror needs to 'correct' for this. It should be possible to construct band-arc telescopes 20 metres or more wide, these would have excellent resolution, although reduced light-gathering capacity. In the present instance, calculations are sought for a proof-of-concept instrument where the primary mirror is a 90-degree section, 10 cm wide, of a 1-metre-diameter circle.