

Topic List

Telescopes

Overall design

Optics: a review

Optical designs

Aberrations to overcome

Refractors

Optical layout

Examples: historical

Reflectors

Optical layout: do with each examples ...

Prime, Newton, Nasmyth, Cass, Gregorian, Schmidt, RC, S-C, etc.

Details

Mirror fabrication: grinding, polishing, Foucault test, knife-edge focus, int. tests

Focal reducers and field correctors

Optical tube designs, Serrurier truss

Mounting types: German, Fork, modified GE (PE 30-in), horseshoe, alt-az, alt-alt

Mirror supports (18-pt, bags), cooling, Invar

Baffles

Domes and Sites

Dome designs, rotation encoding, wind screens, vendors

Thermal and ventilation considerations

Sites, placement, Light Pollution

Detector Systems

General considerations: FOV and image scale, spectral response, speed

Efficiency, info, gain, resolution

Types: photo, PMT, CCD and IR, Image intensifiers

Cooling: theory and types (dry ice, LN₂, TEC, Nicmos pump?), water and active cooling

Filters: broadband, narrow, physics, standard sets, spot, Doppler-shifted