



OPTICS- AND RADAR-BASED OBSERVATIONS

F7003R

Problems in Optics

Author:
Arthur Scharf

April 17, 2016

In this Assignment, *Problem 2 - Problems Optics*, ...

1 Working principle of CCD's

2 CCD Parameters

2.a spectral radiant incidence

2.b number of incident photons

2.c quantum efficiency

2.d pixel

2.e noise and its sources

2.f signal-to-noise ratio for CCD and image intensifier (ICCD)

2.g NEE and SEE

2.h dynamic range

3 CCD Elements for ALIS

3.a optical system

3.b interference filters

3.c camera positioning system

4 Scientific results of ALIS

4.a estimation of auroral electron spectra;

4.b auroral vorticity

4.c ionospheric trough

4.d daytime auroral imaging

4.e auroral events and thermospheric neutral wind

4.f meteor studies