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# NIRSPEC

UCLA Astrophysics Program

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## NIRSPEC Cryomechanics Design Note 17.00 Thermal design

### Introduction

The entire instrument except for the calibration unit and guider will be inside the dewar, which will be very large. With such a large dewar we have to be sure we do everything possible to make it as efficient as we can. By using CCRs for cooling we will avoid the use of liquid helium, but there will still be a nitrogen reservoir.

### What next?

Now that we are close to knowing the exact size and layout of the optical components, we can calculate the radiation load, which will be the dominant thermal load on the dewar internals. Our evaluations with the test chamber should give us a better idea of the how much we can expect floating shields to cut the thermal load.

Once we have a firm idea of the thermal loads we need to decide what configuration of CCR head (or heads) and nitrogen tank we are going to use. The shields need to be designed. We must decide what sort of floating shields, multi layer insulation etc. we are going to use.