



# OGRECam

*A high sensitivity camera for space*

## Introduction

XCAM is currently designing a unique camera system which will be launched from Alaska on a NASA sounding rocket in January 2018.

The camera will be made of 4 custom EMCCDs and will be detecting just 1000 X-ray photons, which will be collected during its 200 seconds in space.

The sounding rocket will also test a new type of high performance X-ray diffraction grating developed by Iowa university and X-ray mirrors currently being developed by Will Zhang's team at NASA Goddard.

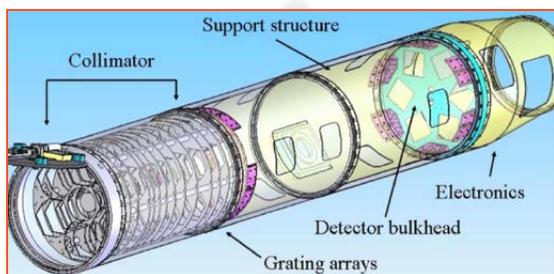


Figure 1. The sounding rocket casing, which houses the detectors and other experimental components.

The detectors will form part of an experiment which aims to gather X-ray light from distant stars. The X-rays will be focussed by mirrors constructed for the purpose at the NASA Goddard Space Flight Center. The light will then be dispersed onto the detector that XCAM builds by a diffraction developed by a research group at the University of Iowa.

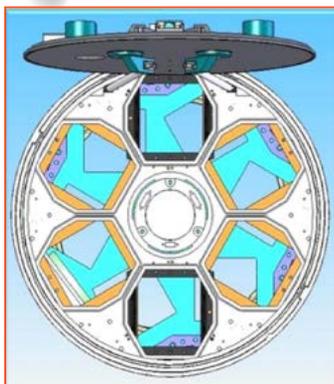


Figure 2. The sounding rocket viewed end-on. The light collected will contain information about the composition of objects deep in space.

## NASA sounding rocket

Sounding rockets are used to carry scientific equipment into a low Earth orbit which is maintained for 5-20 minutes.

The rocket launch provides scientists with a way to test experimental equipment in space before it is used on further missions with longer lifetimes.

The sounding rocket can also be used when measurements need to be made in a lower orbit than can be sustained by a satellite.

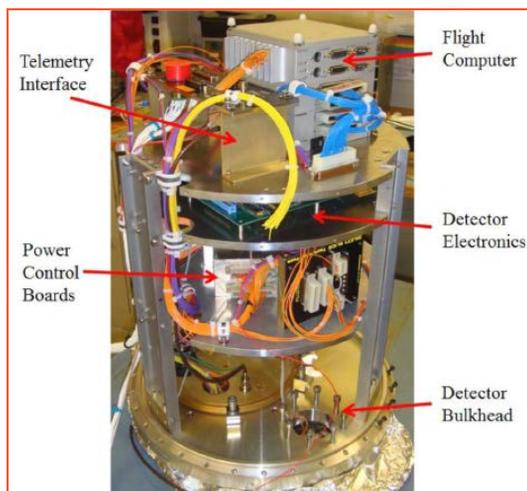


Figure 3. The detector will be mounted on a flange housed within the rocket casing.

The experimental payload can be retrieved from the rocket after it crashes down.

After the flight the space-readiness of the equipment can be determined.



Figure 4. The experimental payload following crashdown.