Abstract Submitted
for the APR09 Meeting of
The American Physical Society

SISPI - The Data Acquisition System for the Dark Energy Survey[1] JACOB EITING, KLAUS HONSCHEID, DARK ENERGY SURVEY COLLABORATION — I will present the data acquisition and control system of the Dark Energy camera (DECam) which will be the primary instrument used in the Dark Energy Survey (DES). The data acquisition and control system, also known as Survey Image System Process Integration or SISPI, is responsible for coordinating the actions of the many components of the DECam instrument by providing reliable middleware. SISPI is implemented as a distributed multi-processor system with a software architecture built on the Client-Server and Publish-Subscribe design patterns. SISPI is written primarily in Python in order to decrease development time and to promote platform portability. A publish/subscribe data sharing system was developed which allows for the trivial sharing of data across multiple machines. A message passing system was also developed to allow for machines to execute commands across the network. These systems were all developed on top of the Python Remote Objects library (PyRO). The observation control system, image readout and formatting, instrument control and the observer console form theapplication layer built on top of this infrastructure. I will present some of the unique features of our design and report initial test results using a multi-CCD DECam prototype at Fermilab.

[1]This material is based upon work supported by the Center for Cosmology and Astroparticle Physics.

Jacob Eiting

Date submitted: 17 Feb 2009 Electronic form version 1.4