The PAU Camera

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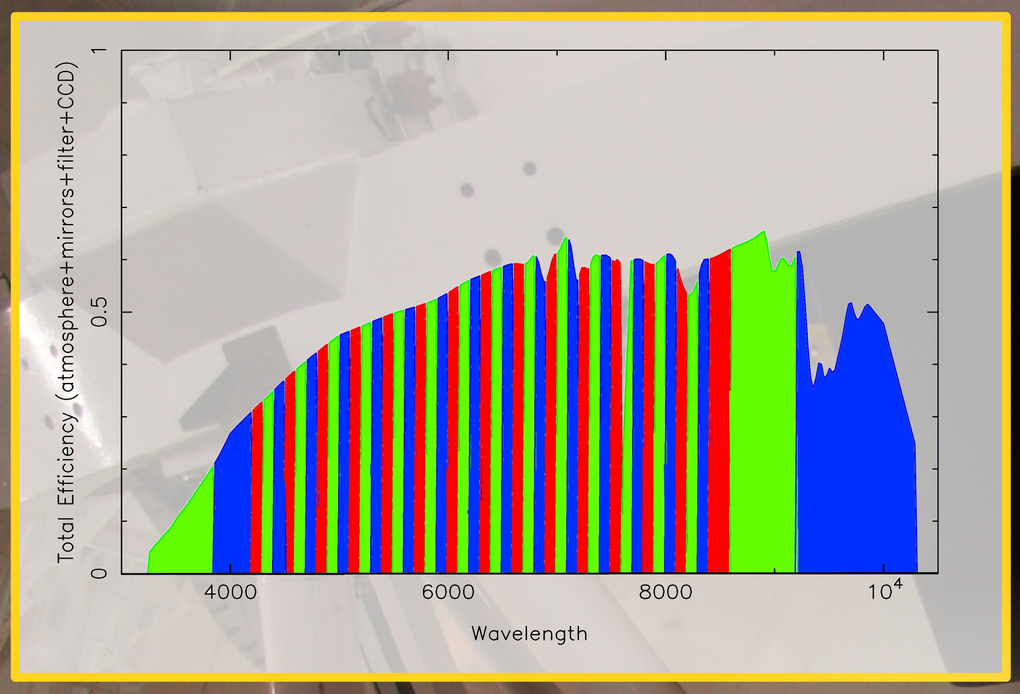
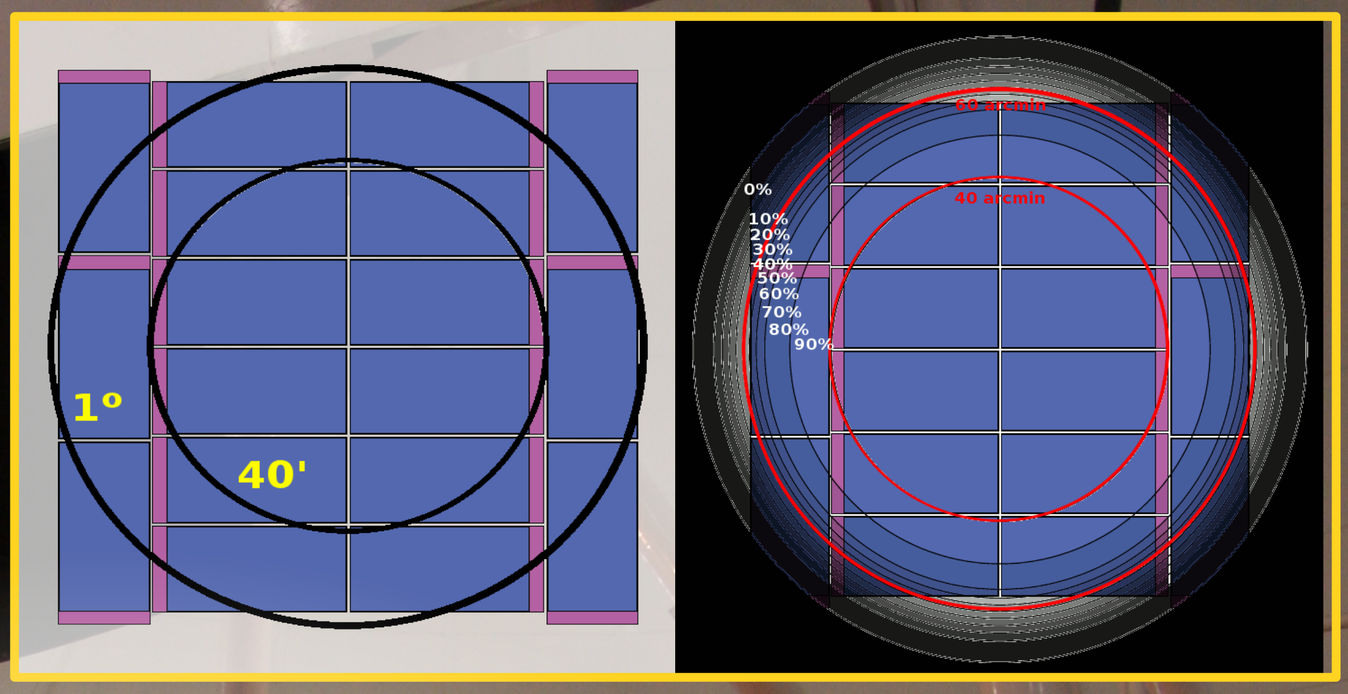
The PAU (Physics of the Accelerating Universe) collaboration is building an instrument, intended for the William Hershel Telescope prime focus, designed to perform a large area survey for cosmological studies.

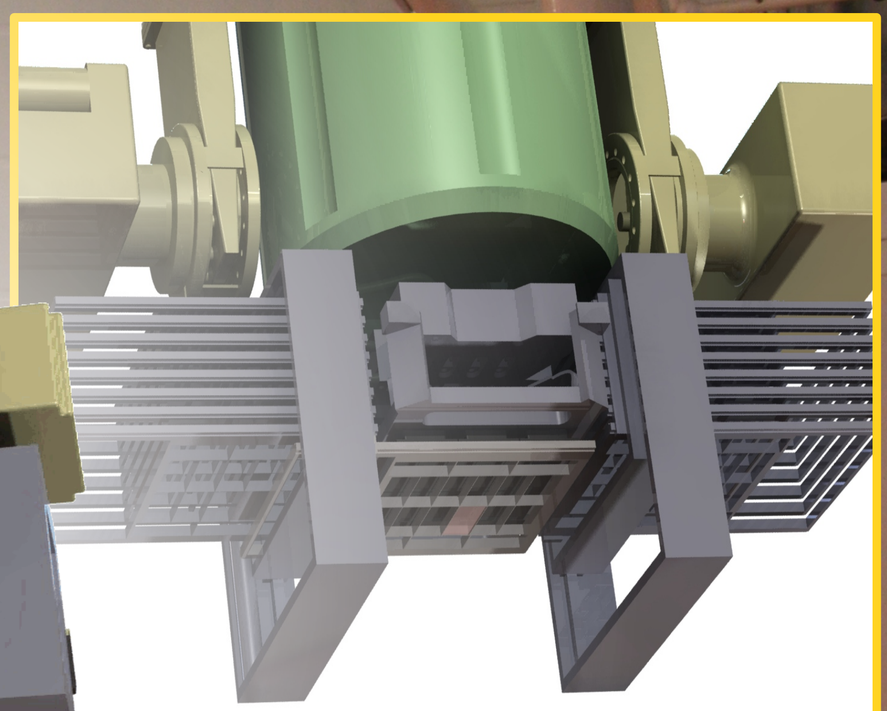


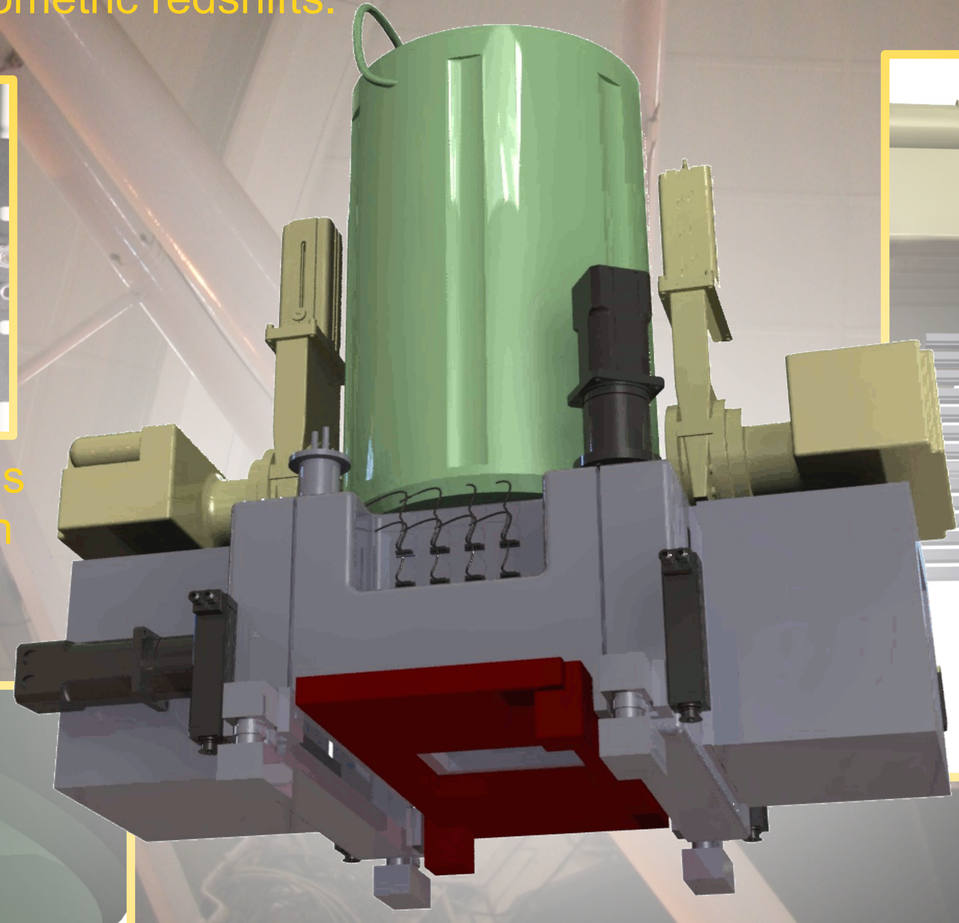
Narrow band imaging: SEDs are sampled using ~40 filters ~100Å wide spanning the optical wavelength range to accurately measure photometric redshifts.

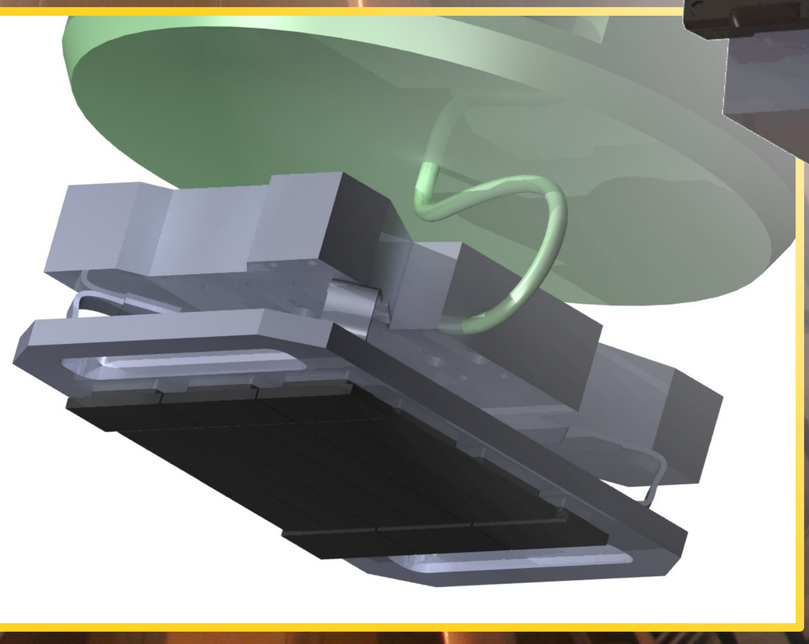


The FoV is 1 degree, densely populated by 18 state of the art CCDs. The maximum vignetting is 50% of the focal plane.

Low read-out noise of the CCDs is being prepared using the Monsoon architecture developed by NOAO.







A pressurized liquid nitrogen tank feeding a boiler inside the cryostat. CCD's will be kept at 170K. Temperature homogeneity achieved with a coldplate: heat spreader and thermal capacitance smoothing the temperature ramps.

The filters, placed as close as possible to the CCD detector on segmented exchangeable filter trays. An innovative jukebox-like exchanging mechanism inside the cryostat based on rolling hybrid bearings technology with tungsten disulfide as solid lubricant has been chosen to hold the movements inside the cryostat.

Two independen t servomotors with absolute encoders outside the cryostat through magnetic feedthroughs will motion the system.

Testing setup for CCD characterization.

Ciemat
Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas

CSIC Consejo Superior de Investigaciones Científicas

ICE IEEC IFAE

PIC port d'informació científica

UAM Universidad Autonoma de Madrid

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