

3D: THE NEW NEAR-INFRARED FIELD IMAGING SPECTROMETER

L. E. Tacconi-Garman, L. Weitzel, M. Cameron, S. Drapatz, R. Genzel, A. Krabbe, H. Kroker and N. Thatte

Max-Planck-Institut für Extraterrestrische Physik

ABSTRACT: 3D is a next-generation near-IR spectrometer developed at the MPE which offers, in a single integration, the opportunity to image an 8" x 8" field across almost the entire K-band at a simultaneous spatial resolution of 0".5 wide strips which are then aligned optically on top of each other forming a single long slit. This long slit is then used as the input for a grating spectrometer which images it onto a two dimensional detector array. Each detector row then represents the spectrum of one spatial element of the two dimensional field of view. The central part of the optical system is the image slicer which is made of two complex plane mirror systems consisting of 16 segments each. The detector is a NICMOSIII HgCdTe array with 256 x 256 pixels. In the spectral domain the spectrometer provides a resolving power of $R = 1000$.

Here we present not only the design of the instrument but also first data obtained during instrument commissioning at the 3.5-m Calar Alto telescope in December, 1993.