W03c Very Wide Field Imager for Hubble Origin Probe

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Very Wide Field Imager (VWFI) is a planned mosaic CCD camera which is one of onboard instruments on Hubble Origins Probe (HOP) together with other two science instruments COS and WFC3. VWFI consists of 59 2K×2K CCDs occupying $>$ 2 quadrants ofthe HOP focal plane with off-axis aberration corrector optics. The astigmatism corrector optics consists of a pair of simple fused-silicaprisms optimized and dedicated to each CCD. The FOV of VWFI is 175.5 square-arcmin, and the HOP OTA with the corrector delivers stable and high Strehl-ratio images with a 0.05 arcsec CCD pixel size over the wide field of view. CCDs are cooled down to -80 °C with a mechanical cooling system and an external dedicated radiator. The fully-depleted CCDs to be provided by Hamamatsu Photonics have a demonstrated capability of high quantum efficiency approx. 0.7 at 1 micron. The very high efficiency at red wavelengths makes VWFI exceptionally qualified to pursue the above science drivers. Multiple optimized filters either allocated to each CCDs or with the mechanical filter wheels allow multi-color imaging.

VWFI is currently being studied with US-Japan working group under the auspices of the NASA Origins Probes Study. VWFI is expected to be primarily provided by Japan.