The design of the wide field monitor for LOFT - DTU Orbit (08/11/2017)

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LOFT (Large Observatory For x-ray Timing) is one of the ESA M3 missions selected within the Cosmic Vision program in 2011 to carry out an assessment phase study and compete for a launch opportunity in 2022-2024. The phase-A studies of all M3 missions were completed at the end of 2013. LOFT is designed to carry on-board two instruments with sensitivity in the 2-50 keV range: a 10 m 2 class Large Area Detector (LAD) with a <1\deg collimated FoV and a wide field monitor (WFM) making use of coded masks and providing an instantaneous coverage of more than 1/3 of the sky. The prime goal of the WFM will be to detect transient sources to be observed by the LAD. However, thanks to its unique combination of a wide field of view (FoV) and energy resolution (better than 500 eV), the WFM will be also an excellent monitoring instrument to study the long term variability of many classes of X-ray sources. The WFM consists of 10 independent and identical coded mask cameras arranged in 5 pairs to provide the desired sky coverage. We provide here an overview of the instrument design, configuration, and capabilities of the LOFT WFM. The compact and modular design of the WFM could easily make the instrument concept adaptable for other missions.

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