



## Detector Electronics for NASA's Next Generation Space Telescopes JWST and WFIRST



**By Dr. Markus Loose**  
President and Chief Scientist  
Markury Scientific, Inc.

**October 26, 2017**

**6:30 pm (pizza and networking), 7 pm talk**

Location

Hub101 - 31416 Agoura Road -Westlake Village, CA 91361

Meetings are free and open to the public

RSVP at <http://detectorelectronics.eventbrite.com>

To continue the success story of the Hubble Space Telescope, NASA together with international partners has been building the James Webb Space Telescope (JWST), with a scheduled launch date of October 2018. More recently, NASA has started the development of the Wide-Field Infrared Survey Telescope (WFIRST) to specifically examine the phenomenon of dark energy. Both telescopes will observe the universe in the infrared part of the electromagnetic spectrum, utilizing specialized detector technology and instrumentation. The presentation will provide an overview of the telescopes and the associated science, followed by a discussion of the design challenges and customized solutions to the problem of detecting the faint light of distant galaxies. Low-temperature electronics including CMOS -based image sensor readouts and low power ASICs have been instrumental in achieving the noise and sensitivity performance requirements of the on-board cameras and spectrographs.

**Dr. Markus Loose** is President and Chief Scientist at Markury Scientific, Inc. He received his Diploma degree in Physics and his Ph.D. degree in Applied Physics from University of Heidelberg, Germany. He has held scientific and management positions at the Institute for High Energy Physics in Heidelberg, Germany, and at Teledyne Imaging Sensors in Camarillo, California. Dr. Loose has over 20 years of experience in the field of image sensor technology for both scientific and commercial applications. He has developed several new types of CMOS imaging sensors including high dynamic range logarithmic camera chips and high definition video sensors. He has also designed the HAWAII-2RG readout integrated circuit and the SIDECAR ASIC, both key components for NASA's James Webb Space Telescope, the Hubble Space Telescope, and for many ground-based observatories. Most recently, Dr. Loose has been working on developing a new control ASIC and improved detectors for the WFIRST telescope.