UNB Physics Department Seminar

WaMI: The Waves Michelson Interferometer

Sam Kristoffersen
UNB Physics

The Waves Michelson Interferometer (WaMI) is designed to make wind measurements of the atomic oxygen green line (557.7 nm) emission, molecular oxygen lines around 1264 nm, and hydroxyl lines around 1315 nm. These emissions provide a capability for probing the dynamics of the middle atmospheres of the terrestrial planets. The special feature of the design of this instrument is that the back mirror is a quad mirror configuration. As a result four fringe phase images can be generated simultaneously thereby eliminating the effects of irradiance variations during the integration time and increasing the overall observation cadence. The WaMI is currently set-up in a laboratory environment, with a retro-reflective wheel used to simulate Doppler winds. Results of the step size calculations, as well as, wind wheel measurements will be presented. These validate the use of this instrument as a monolithic instrument capable of measuring winds without mirror scanning for ground based and satellite applications. Additionally, the effects of environmental parameters (such as temperature and humidity) on the path difference of the interferometer will be discussed.

March 14, 2019, 1:15--2:15 pm in P204. Colloquium tea in P203 beforehand