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Laboratory for Atmospheric and Space Physics
for our next public lecture

*NASA's Global-scale Observations of the Limb and Disk (GOLD) Mission:
Unprecedented Imaging of the Boundary Between Earth and Space*

Richard Eastes

Wednesday, April 5, 2017 at 7:30 PM

(doors open at 7:00 PM)

The GOLD mission of opportunity is the first to image the Earth's Thermosphere-Ionosphere (T-I) system—the boundary between Earth and space—from geostationary orbit. It will also be the first NASA science mission to fly as a hosted payload on a commercial communications satellite. The GOLD mission will study the T-I system's response to forcing from the Sun and the Earth's lower atmosphere.

The mission will fly an ultraviolet imaging spectrograph, built by LASP, to observe the T-I over most of the American hemisphere at a thirty-minute cadence. From the dayside observations, simultaneous images of the composition and temperatures in the lower thermosphere will be obtained. At night, images of the peak electron densities in the low latitude ionosphere will be obtained.

Our lack of understanding of how composition and densities in the thermosphere and ionosphere respond to forcing is a major contributor to uncertainties in predicting space weather. Consequently, GOLD's global scale imaging will provide new insights into the response of the T-I system to solar extreme ultraviolet radiation, geomagnetic activity, and the waves and tides originating in Earth's lower atmosphere. In addition, since GOLD repeatedly images the same geographic locations, it provides context for measurements from low Earth orbit or from the ground. GOLD measurements will give the scientific community a new perspective on the T-I system and the effects of space weather.

GOLD is scheduled for launch late this year.

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