

2019 Physics/Theoretical Colloquium

Thursday, October 10th , 2019

3:45 – 4:45 p.m.

Rosen Auditorium (TA-53, Bldg. 001)

Refreshments at 3:15pm

Speaker: Dr. Charlie Light

Acting Program Manager for the LANL SNDD program

“Space Based Nuclear Detonation (NuDet) Detection”

Abstract:

Since 1959, Los Alamos National Laboratory and Sandia National Laboratories have partnered to design, build and maintain space based instruments to monitor for nuclear detonations (NuDets) anywhere above the surface of the Earth. The Space Based NuDet Detection (SNDD) program is an element of the United States NuDet Detection System (USNDS) which includes ground elements and ties into terrestrial detector networks and airborne sensors. It is an element of the Nuclear Command, Control and Communications (NC3) architecture. Since the launch of the initial Vela Hotel system in 1963, these systems have evolved to provide ever more useful, real-time information to enable treaty monitoring, warfighting and other Government functions. Additionally, these systems have made interesting discoveries including deep space Gamma Ray Bursts, modelled the solar wind and Earth's radiation belts and uncovered many unique features of energetic atmospheric phenomena such as lightning and sprites. The continuing SNDD program is the anchor of LANL's space activities and remains

tightly coupled with space activities LANL accomplishes for NASA, DoD, and other Government agencies.

Short bio: Charlie Light is the Acting Program Manager for the LANL SNDD program. Charlie joined LANL in 2016 as a Systems Engineer for SNDD and other LANL space programs. He became the SNDD Deputy Program Manager in 2017. Prior to joining LANL, Charlie served for 21 years in the US Air Force in various roles developing and operating space and airborne sensors for the Department of Defense and Intelligence Community.

Figure: Artist rendition of the SNDD operational constellation

