



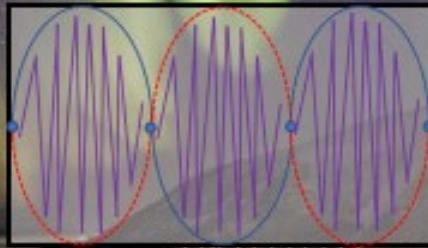
RESEARCH TOPICS INCLUDE:

- ORBITAL MECHANICS
- GPS DILUTION OF PRECISION

SPACE WEATHER

350 KM
150-200 KM
100 KM

- AURORAL SPECTROSCOPY
- PLASMA PHYSICS



SIGNAL ANALYSIS

MODELLING & SIMULATIONS

SPACE POLICY & OPERATIONS

- RADARS & EXPERIMENTAL PROJECTIONS
- RECEIVERS & TEACHING LABS
- RADIO WAVE PHASE SCINTILLATIONS

SPACE WEATHER RESEARCH AT USMA

SPACE WEATHER'S EFFECTS ON GPS SIGNALS IN THE AURORAL OVAL HAVE LED TO NUMEROUS ADVANCES IN HOW WE UNDERSTAND THE BEHAVIOR OF THE HIGH-LATITUDE IONOSPHERE.

OVERARCHING RESEARCH QUESTIONS:

- WHAT ARE THE UNDERLYING PHYSICAL MECHANISMS CAUSING OBSERVED UNENCRYPTED NAVIGATION SIGNAL SCINTILLATIONS IN THE AURORAL OVAL?
- CAN A GLOBALLY ACCEPTED METRIC BE DEVISED TO REPRESENT THE OPERATIONAL IMPACT OF OBSERVED UNENCRYPTED NAVIGATION SIGNAL SCINTILLATIONS IN THE AURORAL OVAL?