



Marine Meteorology and Space Weather ONR Code 322MM 25 June 2025

Ocean, Atmosphere, and Space Research Division

ONR Code 322MM Program Officers

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Office of Naval Research

Historical Origins

- Founded in **1946**, ONR was the first permanent U.S. federal agency devoted to the support of scientific research.
 - ONR became the model for the National Science Foundation (established in 1950).
 - ONR is a research **“mission agency”** for Basic and Applied Research relevant to the Naval Forces



Vannevar Bush
“Science: The Endless Frontier”



ONR Space Weather

Research Area

- **Impact**

- Civil and other DoD ionospheric research does not sufficiently address the Navy's needs for Bottom-Side Ionospheric (BSI) conditions in regional maritime applications for HF Radar and Communications applications.

- **Hard Problems**

- Improved prediction of Sporadic E, Equatorial Spread F, Polar Auroral clutter, transient effects of TIDs.
- Improved sensing of regional conditions using nontraditional means.

- **Key Stakeholders**

- Research partners, Naval Information Warfare Forces, Navy METOC

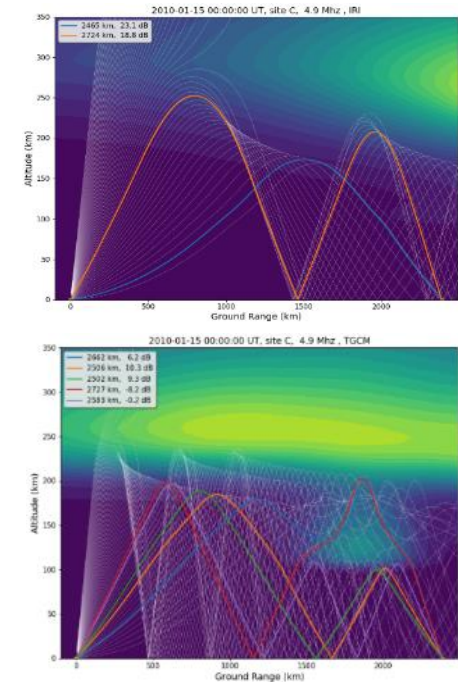
- **Research thrusts**

- Understanding and prediction of low latitude and high latitude irregularities away from ground-based observing systems
- Ionospheric drivers from below/ coupling between the stratosphere and thermosphere
- Global assimilation of non-traditional ionospheric measurements
- Space-based and maritime remote sensing applications
- Communication applications
- Low cost innovations (Cubesats, secondary payload sensors)
- High latitude ionospheric modeling



ONR Space Weather Current Projects

- NIMO
 - NIMO is an ionospheric specification and short-term climatological forecast model that is operational at Fleet Numerical Meteorology and Oceanography Center (FNMOC)
 - Consists of an ionospheric data assimilation system (IDA4D), coupled to a physics-based ionosphere forecast model (SAMI3)
- PRISM
 - High latitude, regional ionosphere research of NIMO
 - Winter 25/26 campaign in final planning
 - Breakout on Friday, Room 311
- SUNDIAL
 - Low latitude ionosphere research in support of NIMO
 - Field campaign in Pacific in development
- Gravity Wave impact on the ionosphere
 - FY25 MURI
- ORPHEUS
- STPSat-7





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Funding Opportunities

- FY25 MURI Status Update
- Long Range BAA
 - <https://www.nre.navy.mil/organization/departments/code-32/division-322/marine-meteorology-space>
 - Formal Planning Letters encouraged by July 1 annually for the following Fiscal Year (Oct 1st)
- Defense University Research Instrumentation Program (DURIP)
 - Typically posted in Feb, due in May
 - Awards up to \$500k for research hardware
- SBIR / STTR
 - Due dates typically in the spring
 - <https://www.navysbir.com/>



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Funding Opportunities

- N0001425SF004 FY26 Young Investigator Program
 - Posted 6/20/2025, Due 1 Aug. 2025
 - <https://www.onr.navy.mil/work-with-us/funding-opportunities/notice-funding-opportunity-nofo-fiscal-year-fy-2026-office-naval>
 - Up to \$750k over 3 years for tenure-track faculty who received PhD after 1/1/2018
 - U.S. Citizenship required
- NRE Undergraduate and Graduate Internships (NREIP and SEAP)
 - <https://www.nre.navy.mil/education-outreach/undergraduate-graduate/nreip-naval-internship>
 - Stipends \$7,500 for undergrad, \$11,500 for graduate students
 - (Open Application Period Aug 1 -Nov 1 for the following summer)
- NRL Pathways Internships (Quarterly)
 - <https://www.nrl.navy.mil/careers/students/pathways/>
- NRL-NRC Post-Doctoral Program
 - <https://www.nrl.navy.mil/Careers/Post-Docs/NRC/>
 - Application deadlines: February 1, May 1, August 1 and November 1



Questions

Contact us

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ONR 322MM
Website