PAUL SHANKLAND, Ph.D.

Director
Naval Observatory Flagstaff Station

Dr. Paul D. Shankland, a native of Greensboro, North Carolina, graduated from the U.S. Naval Academy in 1983 with a Bachelors degree in pure mathematics. During his subsequent 25 years of active duty, he earned a masters degree in astronomy (with distinction) from the University of Western Sydney, and his Ph.D. in Astronomy from James Cook University. His thesis research was on optical and millimeter radio detections, and dynamic properties of Earth-like planets and Kuiper belts about M dwarf stars.

Upon graduation from USNA Dr. Shankland served aboard USS SELLERS (DDG-11), where he earned his Surface Warfare Officer designation and participated in Persian Gulf protection operations. In 1986 he laterally transferred to the aviation community and earned his wings, becoming an E-2C *Hawkeye* pilot. Dr. Shankland served in squadrons aboard the carriers USS FORRESTAL (CV-59) and USS GEORGE WASHINGTON (CVN-73), where he served in Desert Storm/Provide Comfort, several subsequent middle-Eastern operations, and in the Adriatic and Kosovo/Bosnia. He was carrier pilot "Top Hook" twice and was nominated the 1991 "Hawkeye of the Year". He also served as an Instructor pilot at VAW-120, and then at Carrier AEW Wing Atlantic. From 1996 to 1999, then-Commander Shankland served Joint Interagency Task Force East's Coast Guard admiral for Central/South American special operations. He returned to sea in 1999, joining USS THEODORE ROOSEVELT (CVN71) as the Strike Operations Officer, where he concurrently flew with VF-102 (*Tomcats*) and HS-11 (*Seahawk* Helicopter Combat Search and Rescue). In 2001, Shankland led the *TR* war planning effort for its "9/11" response deployment to Afghanistan.

As 2001 concluded, Dr. Shankland was appointed to become Executive Officer, then Commanding Officer of Strike Training Squadron *NINE* (VT-9) -- the Navy's largest aviation squadron, numbering 550 members and $2.2 Billion in assets (aircraft). VT-9 flew T-2C Buckeyes and T-45C Super Goshawks to train tactical carrier strike and fighter pilots. In 2004 Dr. Shankland was appointed to the U.S. Naval Observatory, as Director of Space Acquisitions, Programs, Plans & Requirements (N5/N8). At USNO, he oversaw the scientific development, requirements, programmatics and funds sourcing of Astrometric, Earth Orientation, Celestial Applications, and Atomic Time/GPS programs. During his uniformed career, Dr. Shankland earned military subspecialties in Manpower resourcing, Command and Control (C2), and was designated a Space Professional. He retired from the flight suit in 2008, with 3800 hours in 22 aircraft types, 374 arrested landings on 12 aircraft carriers, and had earned 42 medals, decorations, and campaign awards.

In June 2008, Dr. Shankland was appointed via civil service (Grade 15) to become the 6th Director of Naval Observatory Flagstaff Station (NOFS)–a 290-acre astrophysical dark-sky facility which operates on a 7800-ft peak in Alpine northern Arizona. Dr. Shankland's astronomers observe celestial data to create DoD star catalogs and parallaxes, conduct research to improve operational and research methods, and develop cryogenic imaging systems, adaptive optics, advanced infrared and optical detectors, elements and instruments. NOFS operates 1.55m, 1.3m, & 1m aperture telescopes –and the 437-m baseline Navy Prototype Optical Interferometer array, on nearby Anderson Mesa. In 2009 NOFS began installation of four 1.8-meter telescopes alongside its dozen arrayed siderostats. Dr. Shankland is the Senior Naval Representative in Arizona

During his career, Dr. Shankland also conducted diverse research endeavors like the Global Exoplanet M-dwarf Search-Survey (GEMSS), using the Very Large Array, the Australia Telescope Compact Array (ATCA), the Giant Metrewave Radio Telescope (GMRT), Lick Observatory, Perth Observatory, the Spitzer Space Telescope, and the Naval Observatory. He also designed and built the airborne Tactical Observatory for Photometry of Astronomical Targets (TOP-hAT) and other optics, cameras, instruments and electronics. He is lead author of several DoD-white and academic astrophysics papers, and developed requirements for both NPOI and the Joint Milli-Arcsecond Pathfinder Satellite (JMAPS). Dr. Shankland is a member of the *American Astronomical Society* (AAS), the *Division of Planetary Science* (DPS), and the *Division of Dynamical Astronomy* (DDA). He is a member of the *American Institute of Physics* (AIP); and the *International Astronomical Union* (IAU), serving there on Commissions for Celestial Mechanics & Dynamical Astronomy, Extrasolar Planets, Fundamental Astronomy, Stellar Photometry & Polarimetry, and the History of Astronomy. He is also a member of the *Institute of Navigation*, the *Navy Tailhook Foundation*, the *Professional Association of Dive Instructors*, the *International Sled Dog Racing Association*, the *Scottish-American Military Society*, the *Experimental Aircraft Association* (EAA), and the *International Aerobatics Club* (IAC).