

NASA Marshall Space Flight Center Earth Science Office

The Earth Science Office at Marshall Space Flight Center in Huntsville, Alabama is soliciting statements of interest for full-time PhD level civil service scientist positions for early- and mid-career positions in the following areas:

Hydrologic Processes

We seek a scientist with expertise in performing basic and applied research that uses NASA remote sensing assets of precipitation (e.g., GPM) or land surface (e.g., SMAP, derived MODIS products, ASTER, Landsat) exclusively or in conjunction with other domestic and international mission sensors for improving hydrologic, streamflow, or land surface models. Expertise may also be demonstrated in use of current missions or simulated data sets as precursors to upcoming NASA instruments (e.g., GRACE-FO, SWOT, NISAR, HySPIRI, ECOSTRESS). Candidates should have (at a minimum) expertise using land surface models (e.g., Noah, Noah-MP) and hydrologic models (e.g., VIC, CREST, WRF-Hydro) and ideally have experience in using these models with coupling to a regional or global numerical weather prediction system.

Atmospheric Remote Sensing

We seek a scientist with expertise in atmospheric remote sensing and experience in development of new remote sensing products from infrared and passive microwave sensors to support scientific study and transition to operational customers. Developed products will target applied research to demonstrate forecast improvements in support of transition to operations activities of the Earth Science Office. Products developed are expected to make use of new sensors that represent state-of-the-science observing platforms for Earth's atmospheric processes at improved resolution and/or accuracy compared to predecessor sensors. Expertise in the study of atmospheric processes including convection, clouds/fog, atmospheric dynamics, and dust/aerosols, and coordination/communication with end users (e.g., NOAA/NWS, EPA, etc.) is desired.

Radio Frequency Engineer for Microwave Remote Sensing

We seek an Earth Science microwave remote sensing engineer experienced in the design, development and integration of active and/or passive microwave instruments for multi-frequency (0.5 GHz – 500 GHz) airborne and satellite remote sensing of the earth's atmosphere, hydrosphere, cryosphere and biosphere. Qualified candidates will possess a combination of skills ranging from advanced antenna design to include patch-panels and AESA technologies, digital receiver/transmitter design and electronics, digital signal processing, imaging techniques to include both synthetic and real apertures, data storage/handling, and instrument calibration. Also highly desired are systems engineering skills and a demonstrated ability to effectively translate between earth system science requirements for field and science applications and instrument calibration and imaging requirements.

Climate Science

We seek a scientist with expertise in dynamical modeling and diagnostic analysis of water and energy flux processes relevant to the climate system on regional to global scales and at intraseasonal to decadal time scales. The successful candidate will demonstrate a strong background in combining satellite retrievals, reanalysis data, and global / regional modeling perspectives in addressing connections between physical processes and intraseasonal to decadal climate variability. In particular, skill in combining current and emerging NASA capabilities to measure and validate climate system processes and feedbacks is strongly desired. The ability to collaborate closely with ocean and land modeling colleagues in the design, execution and interpretation of climate model experiments using the NASA GEOS model system and NASA high performance computing capabilities is desired.

Applications of Synthetic Aperture Radar

We seek a scientist with expertise and demonstrated experience in Earth Science remote sensing using synthetic aperture radar (SAR) technologies from airborne or satellite platforms for scientific studies and end user applications. Knowledge of SAR instrument technologies (orbital and/or sub-orbital), measurement techniques (e.g., polarimetry, inSAR), and broad experience in the application of the data to surface remote sensing problems for hydrologic, agricultural, and disaster applications is highly desired.

Snowfall Remote Sensing and Processes

We seek a scientist with expertise in active and/or passive microwave remote sensing of snow as it falls from the atmosphere, terminates on the land surface, and becomes stored as water content in the form of snowpack. The candidate will possess a robust understanding of snow physical properties, retrieval of those properties using remote sensing, and coupling of those properties to surface hydrologic and climate processes.

The above positions are intended for civil service hiring of U.S. citizens. A PhD or equivalent experience in Earth science or related discipline and in working in project teams involving a diverse workforce is highly desired for all positions. Interested candidates may respond to this Request for Information (RFI) by submitting a cover letter, curriculum vitae, and statement of research interests in a single pdf file to paul.f.tatum@nasa.gov. This submission will not replace the formal application process for the anticipated positions when/if they are advertised on USAJOBS (<https://www.usajobs.gov>).