



Job Description: Senior Researcher in Emirates Mars Mission related science

Revised 8 June 2021

General Information	
Job Title:	Senior Researcher in Emirates Mars Mission related science
Department:	National Space Science and Technology Center
Division:	National Space Science and Technology Center
Location:	UAE University, Al Ain, United Arab Emirates
Type:	Full time
Closing date:	The position will remain open until filled.
Length of position:	Three years in the first instance, with the possibility of renewal. The employment contract is renewed on a 1-year rolling basis.
Contact:	Dr Roland Young (roland.young@uaeu.ac.ae)

Direct Supervisor's Job Title
<ul style="list-style-type: none"> Director of the National Space Science and Technology Center

Subordinate's Job Title(s)
<ul style="list-style-type: none"> N/A

Description of the Position
<p>The National Space Science and Technology Center (NSSTC) at the United Arab Emirates University (UAEU) in Al, Ain, UAE invites applications for a Senior Researcher position in planetary science related to the Emirates Mars Mission (EMM, https://www.mbrsc.ae/emirates-mars-mission). EMM reached Mars in February 2021 to study the influence of Mars' climate and lower atmosphere on the escape of hydrogen and oxygen from its upper atmosphere, what atmospheric processes drive diurnal variations, and how energy is transferred from the lower-middle atmosphere to the upper atmosphere.</p> <p>We are looking for an experienced researcher to propose, lead, and develop their own research program related to EMM within the existing Planetary Science group at NSSTC. The anticipated start date is as soon as possible but is likely to be sometime during Fall 2021. The research program should be in a scientific field</p>

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relevant to EMM, and complementary to existing expertise and experience within the Planetary Science group. The group's existing Mars expertise is in planetary climate modelling, data assimilation, the dust cycle, and other physical processes relevant to Mars' lower atmosphere and climate. The Senior Researcher's expertise could be in the upper atmosphere, surface or subsurface, polar science, atmospheric retrievals, ionosphere, atmospheric chemistry, solar-planetary interactions, or anything else that makes use of the data coming from EMM. We are particularly interested in proposals making use of data from the Emirates Mars Ultraviolet Spectrometer (EMUS). The proposal should plan to make use of EMM's publicly-available dataset.

The position is comparable with a Research Fellow in the UK or US systems. The researcher will devote the majority of their time to their proposed research program and to developing the planetary science group at NSSTC. We anticipate the Senior Researcher applying for their own funding to expand their research program, and supervising research assistants, students, and postdoctoral researchers in due course. NSSTC will also require the successful candidate to devote some of their time contributing to its operational Earth Observation objectives, based on personal experience and expertise.

The National Space Science and Technology Center, Al Ain

NSSTC is a research and development institute of some 50 staff located on the UAEU campus in Al Ain, about 90 minutes' drive from Abu Dhabi and Dubai. UAEU is the largest and highest-ranked public university in the UAE.

The Center was established jointly by UAEU, the UAE Space Agency, and the UAE Telecommunications Regulatory Authority (ICT-Fund), motivated by UAEU's desire to strengthen its role in and contribute to the needs of the nation in Space Science and Space Technology, and to become a Space Science and Technology hub for the region. NSSTC focuses on research and development, higher education, and community outreach. The Center's priorities are three-fold: excellence in Space Science, leadership in Space Technology, and providing innovative solutions to a broad spectrum of societal challenges.

Recently completed at UAEU is NSSTC's Assembly, Integration, and Testing facility for satellites up to 250 kg, which will also support UAEU students' CubeSat projects with the capability of building multiple satellites at a time. The facility includes a cleanroom, thermal vacuum chamber, vibration system, anechoic chamber, ground station, and mission control room. The Center's other upcoming facilities include Global Navigation Satellite System and Propulsion laboratories, a Radio-Array Observatory for Astronomy, Space Situational Awareness and multidisciplinary space science research, and NSSTC's research staff also have access to UAEU's High-Performance Computing cluster.

NSSTC has expertise in spacecraft communications and precision positioning, on-board real-time systems, space situational awareness, global navigation systems, space resource utilization, Geospatial Information System, Earth Observation, and Planetary Science. The Planetary Science Group currently includes two faculty, one

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senior researcher, two research assistants, and several MSc students. Alongside Mars, its members have expertise in modelling giant planet atmospheres, geophysical fluid dynamics laboratory experiments, visible and radar remote sensing, and small satellite spacecraft. The group members have ongoing collaborations with the EMM Science Team, Oxford University, the Laboratoire de Météorologie Dynamique (LMD), the Space Science Institute, the ExoMars Trace Gas Orbiter ACS instrument team, and Aeolis Research.

Application instructions

To apply, please submit the following via UAE University's jobs portal at <https://jobs.uaeu.ac.ae/>:

- (1) Cover letter
- (2) CV
- (3) Research proposal (maximum three pages including references)
- (4) Publications list
- (5) Copies of three recent research papers
- (6) Contact details of three professional references

Tasks and Responsibilities

- Conduct a vigorous, high-level research program making use of observations from the Emirates Mars Mission.
- Undertake independent and collaborative research in Mars science.
- Develop internal and external collaborations to meet the goals of the research program.
- Publish research work in the open scientific literature.
- Present research work to a variety of audiences within the University, the UAE, and at international conferences.
- Supervise research assistants, postdoctoral researchers, and research students.
- Apply for funding to grow the research program.
- Contribute to NSSTC operational Earth Observation objectives, based on personal experience and expertise.
- Contribute to NSSTC capacity building, outreach events, and other community services.
- Take part in NSSTC research group and business meetings.
- Represent NSSTC and UAE University within the UAE and internationally.

This is not intended to be an exhaustive list of tasks and responsibilities, and will be subject to periodic review by NSSTC.

Organizational Relationships & Communications

Internal Communications:

- NSSTC Planetary Science Group
- NSSTC Earth and Planetary Science Unit

Organizational Relationships & Communications
<ul style="list-style-type: none"> ▪ UAEU Department of Physics ▪ UAEU Department of Geography and Urban Sustainability
External Communications:
<ul style="list-style-type: none"> ▪ National and international project partners

Job Requirements
Educational Level/ Required Certificates:
<ul style="list-style-type: none"> ▪ Undergraduate degree in physics, mathematics, engineering, computer science, astronomy, or a related subject. ▪ Ph.D. degree in physics, planetary science, atmospheric physics, meteorology, or a closely related field.
Experience:
<p>Essential:</p> <ul style="list-style-type: none"> ▪ Several years' experience in a relevant area post Ph.D. ▪ Experience in one or more of the following in the planetary science context: data processing, analysis, modelling, interpretation, and the use of remotely sensed data. ▪ A strong track record of published work in a relevant field. ▪ Experience presenting your work at national and international conferences. <p>Desirable:</p> <ul style="list-style-type: none"> ▪ Experience on one or more spacecraft mission science teams. ▪ Proven ability to attract research funding. ▪ Experience supervising research staff or students. ▪ Experience leading research projects.
Recommended Training Courses:
<ul style="list-style-type: none"> ▪ N/A

Required Knowledge, Skills, and Competencies
<ul style="list-style-type: none"> ▪ Expertise in the major software tools used in your field. ▪ A strong desire to contribute to cutting edge research. ▪ Excellent communication skills in English, both verbal and written. ▪ The ability to work independently on a research project. ▪ The ability to lead and work within a team. ▪ Ability to write high-quality research papers and grant proposals. ▪ Willingness to travel overseas when necessary.