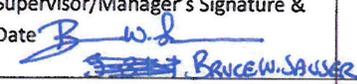


JSC Senior Design Project and or Intern Request Form

EA3-2

Project Title:	Space Radiation Monitoring		
Project Description:	Evaluate the ability of CMOS image sensors to be used for space radiation monitoring.		
Choose most appropriate area of research:	<input type="checkbox"/> Planetary Surface Systems <input type="checkbox"/> Ground Operations <input type="checkbox"/> Propulsion <input type="checkbox"/> Spacecraft <input type="checkbox"/> Human Health Program		
Program Applicability	<input type="checkbox"/> ISS <input type="checkbox"/> CEV/SLS <input type="checkbox"/> Commercial Crew <input type="checkbox"/> Asteroid <input checked="" type="checkbox"/> Adv. Technology (AES/STMD)		
Choose one project:	Roles and Responsibilities of Senior Design POC/Mentor		
<input checked="" type="checkbox"/> Senior Design	I have coordinated with my management and I am able to support at least three (3) teleconferences (kick-off, mid-term, and final) with a Senior Design Project Team at a university that chooses my project. I understand that I shall not provide any sensitive or classified information to the Senior Design Project students of faculty. I will provide feedback to the project team if requested.		
<input type="checkbox"/> Internship	I have coordinated with my management and I am able to support an intern. If an intern is selected for my project, I will provide an environment where an intern can grow and we may have a mutually beneficial and successful internship. My project will be able to provide a desk space, work area, and computer for an intern. I will review any final report or presentation that the intern generates during his/her internship and submit it to Export Control (DAA) for approval. This project opportunity will be posted in OSSI, through the office of Education (use exact same title). OSSI website: : https://intern.nasa.gov		
Check desired Timeframe for Internship:	<input checked="" type="checkbox"/> Year long <input type="checkbox"/> Summer <input checked="" type="checkbox"/> Fall <input checked="" type="checkbox"/> Spring		
Check desired Major/Minor(s) for Internship:	<input checked="" type="checkbox"/> Aerospace Engineering <input type="checkbox"/> Aeronautical Engineering <input type="checkbox"/> Astronautical Engineering <input checked="" type="checkbox"/> Biomedical Engineering <input type="checkbox"/> Chemical Engineering <input type="checkbox"/> Civil Environmental <input type="checkbox"/> Health Engineering <input checked="" type="checkbox"/> Electrical, Electronic Engineering <input type="checkbox"/> Computer Engineering <input checked="" type="checkbox"/> Engineering Physics <input type="checkbox"/> Industrial Manufacturing Engineering <input type="checkbox"/> Materials, Metallurgical Engineering <input type="checkbox"/> Mechanical Engineering, Mechanics <input checked="" type="checkbox"/> Nuclear Engineering <input type="checkbox"/> Astronomy, Astrophysics <input type="checkbox"/> Chemistry <input type="checkbox"/> Optics <input checked="" type="checkbox"/> Physics <input type="checkbox"/> Atmospheric Sciences <input type="checkbox"/> Geography <input type="checkbox"/> Geosciences <input type="checkbox"/> Oceanography <input type="checkbox"/> Natural Resource Management <input type="checkbox"/> Mathematics, Applied Mathematics <input type="checkbox"/> Computer Science <input type="checkbox"/> Astrobiology <input type="checkbox"/> Biology <input type="checkbox"/> Biochemistry/Biophysics <input type="checkbox"/> Microbiology Bacteriology <input type="checkbox"/> Chemical Engineering <input type="checkbox"/> Other, please specify:		
Mentor Name:	Doug Holland	Mentor's E-mail:	s.d.holland@nasa.gov
Title & Organization:	EE / EA351	Phone #:	X33638
Alternate POC/Mentor Name:		Alternate's E-mail:	
Education Office Signature and Date:		Intern Mentor's Signature & Date:	
As supervisor/manager, I approve of the above named individual as Senior Design Project POC of Intern Mentor.	Supervisor/Manager's Signature & Date	 Bruce W. Sausser	
(For Intern Request Only) As Administrative Officer, I am aware that the above named Intern Mentor has submitted a request for an Intern.	Administrative Officer's Signature & Date:	5-31-13	

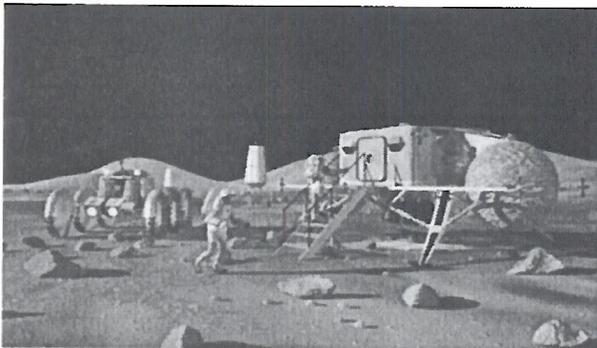


TOPIC # - TDC-06-F12

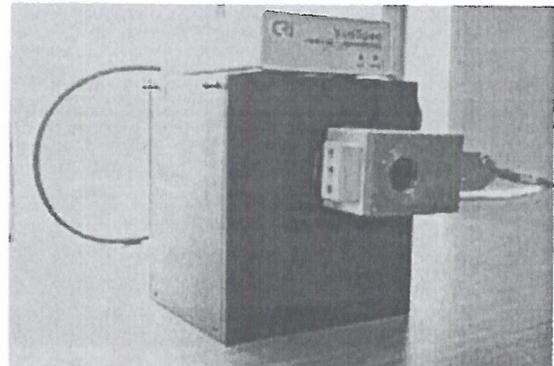
REMOTE IMAGE SYSTEM ACQUISITION (RISA) SPACE ENVIRONMENT MONITORING

PROJECT DESCRIPTION:

The RISA multispectral imager has been shown to be able to detect and measure space radiation. Further study is required to determine the usefulness and potential of employing the RISA imager as a space radiation monitoring device. The ability to have a single instrument provide multiple functions is of interest to NASA given limit stowage and power available in the spacecraft environment. This project would include exposing the RISA imager to radiation sources of various types of particles and then analyzing the resulting data to characterize and validate the types of particles being detected. A qualifying university would need to have access to radiation sources and methods to create secondary particles of interest. In addition, temperature monitoring, and other environmental characteristics shall be included in the RISA design to serve to both indicate the ambient environment and for sensor calibration



Pressurized Habitat. Image Credit: NASA



Possible solution prototype

DESIGN TEAM PROFILE:

- Level:** Upper Division students
- Major:** Physics, Nuclear Physics, Biomedical Engineering, Electrical Engineering, Software Engineering, Mechanical Engineering
- Teams:** Mentor may accept more than one team

Design project topic offered by:
NASA Johnson Space Center
Advanced Development Office

