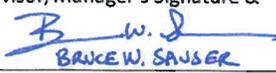
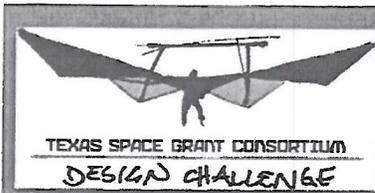


JSC Senior Design Project and or Intern Request Form

EA3-4

Project Title:	Celestial Object Spectral Analysis		
Project Description:	Catalog the spectrum of galactic deep sky objects.		
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 type="checkbox"/> Aerospace Engineering <input type="checkbox"/> Aeronautical Engineering <input type="checkbox"/> Astronautical Engineering <input type="checkbox"/> Biomedical Engineering <input type="checkbox"/> Chemical Engineering <input type="checkbox"/> Civil Environmental <input type="checkbox"/> Health Engineering <input type="checkbox"/> Electrical, Electronic Engineering <input type="checkbox"/> Computer Engineering <input type="checkbox"/> Engineering Physics <input type="checkbox"/> Industrial Manufacturing Engineering <input type="checkbox"/> Materials, Metallurgical Engineering <input type="checkbox"/> Mechanical Engineering, Mechanics <input type="checkbox"/> Nuclear Engineering <input checked="" type="checkbox"/> Astronomy, Astrophysics <input type="checkbox"/> Chemistry <input checked="" 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	 5-31-13
(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:	



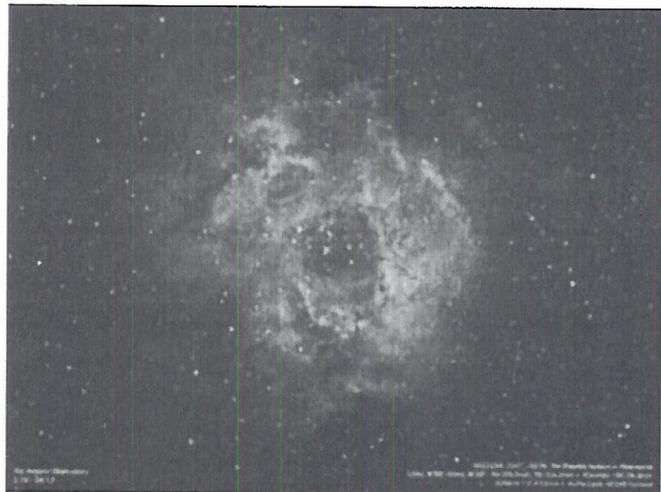
TOPIC # – TDC-BR549

CELESTIAL OBJECT SPECTRAL ANALYSIS

Project Description:

The objective of this project is to create a catalog of spectrums of galactic deep sky objects. The project will require an observatory based system that can gather the spectrums of a variety of deep sky objects and then analyze that data to determine the variations in spectrums of these different classifications of celestial objects. The resulting spectrums will be used to determine their compositions. The objects to be cataloged will include: super nova remnants, emission nebulae, reflection nebulae, and planetary nebulae. Multiple samples of each type of object will be studied and the variations in spectrums analyzed and documented. The catalog will include a graphical representation of the spectrums as well as a summary of the analysis for each object.

Narrowband Image of the Rosette Nebula, NGC2244, NGC2237-39



In this project you will:

- Research: Research astronomical techniques for gathering imagery and spectral data for the purpose of analysis.
- Development, Design and Implement: Develop, design and implement an imaging and spectrum gathering capable system employing hardware and software.
- Analyze: Analyze the resulting data gathered to quantitate and document the spectrums of celestial objects in a catalog form.

Design Team Profile:

- Level: Upper Division students
- Major: Astronomy, Physics, Optics, EE
- Pre-requisites: Must have access to observatory or long exposure capable telescope, other elements will be developed as part of this project
- Teams: Mentor may accept more than one team

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

