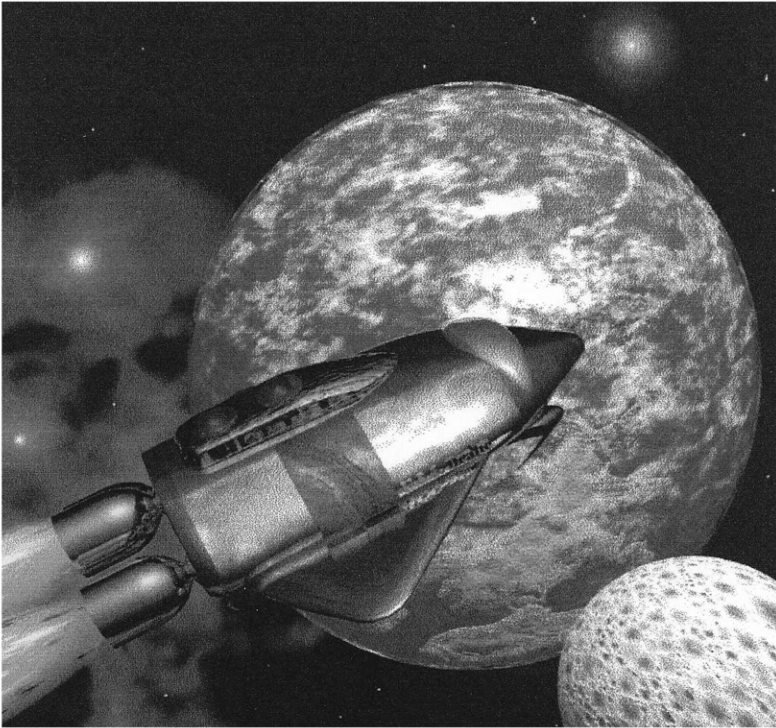


Interstellar Voyage Proposal

Name: _____ **Date:** _____ **Period:** _____

Instructions: It is the year 2348 AD and you are the Project Director to build the first interstellar space ship, the *U. N. S. Brahe*. You are responsible for all aspects of planning, building, crew selection, etc. for this mission and you must present a proposal to the United Nations asking for funding. It will cost over \$500 billion to build, and you must justify the expense and describe this ship and its objectives fully before your proposal will be approved. Here are some items you should address in your proposal:



1.) *Mission Objectives:* What route will you take and which star systems will you visit and why? Will your first priority be to seek out new worlds, or will it be purely to study stars? How long will your mission take (assume you can go no more than 10% of the speed of light and that you will be making a round trip)? What is your mission profile? What benefits will this mission bring to Earth?

2.) *Propulsion Design:* What type of engine will you use? Will it be a chemical rocket, an ion drive, a fusion drive, a Bussard ramjet, a light sail, or some other propulsion system? How will you carry your fuel, if required? How will you shield your ship from the radiation of your drive?

3.) *Crew Safety:* How will your crew quarters be designed to maintain the safety of the crew? How will you protect your ship from space debris and cosmic rays? How will the crew move around the ship, and what kind of facilities will they have for food, recreation, sleep, etc. How will you keep them alive for the long duration (several centuries) of this mission? Will you put them into hibernation or cryogenic sleep? Or will you create a multi-generation ship to support an entire population of people? Since muscle and bone tissue lose mass in free fall, you will need to create artificial gravity by spinning a portion or all of your ship, or by constant acceleration then deceleration.

4.) *Crew Selection:* How will you select and train your crew for this mission? What nationalities, ethnic groups, genders, ages, psychological profiles, etc. will you choose? What kind of training will they need? What sort of specialties will be necessary for the success of this mission? How many people will you take?

5.) *Construction:* How and where will you build this ship? In earth orbit or on the ground or moon? How long will it take to build and how much will it cost? How will you house the construction crews and how will you transport materials to the building site? What kind of redundant systems will you use, in case of an emergency, if the primary systems fail?

You will write up an executive summary of your proposal which answers all these questions. In addition, you will draw out your final design, showing all the points mentioned with everything completely labeled and described. You will be graded on your creativity and vision as well as the technical and scientific accuracy of your proposal.