

Mission Overview

Overview

Just like NASA teams of scientists and engineers, your team will propose a site for a future lunar outpost and debate why it should be chosen.

Team Task

- Review the data about potential sites for future human lunar habitation
- Select the site that has the fewest risks and most benefits in your view

As a team, determine which site you wish to investigate first.

Go to the site and examine and discuss the data with your team (temperature, terrain, water and other resources, radiation, science, special considerations).

For each data type, make a determination about whether or not the site is a “go,” “no go,” or if you need more of this particular type of data from the future LRO mission. Mark your chart with your decision about the data using a different colored dot for “go,” “no go,” or “more data.”

Continue to gather data from the different sites until you can make a decision about which site your team recommends to NASA for future habitation. You must have at least 4 pieces of information about each site to propose one. Be prepared to justify your selection based on the data you have.

Human Habitat Needs	Considerations
Safe landing site; navigable terrain	Flat terrain is best, not near steep cliffs, mountainous regions or areas with lots of boulders.
Water ... or Water Ice	Can be used for water and fuel. May occur as ice on the Moon, delivered by comets and maintained in Permanently Shadowed Regions (PSRs) near the poles.
Energy Source	Batteries are heavy payload to send to the Moon. Solar power will be a primary source. Fuel could come from the break down of water ice into oxygen and hydrogen.
Protection from high levels of radiation	Natural habitats or resources, such as lava tubes (ancient caves created where lava once flowed) or soil to cover a base or make lunar bricks, offer protection from radiation and extreme temperatures. If not available, a base will need to be built.
Protection from extreme temperatures	
Materials to build	Aluminum, titanium, iron, loose lunar regolith to make “lunar bricks” all offer building resources.
Means of communicating with Earth	Needs a clear line of sight to Earth, or a more costly satellite system will be needed
Other	What are the interesting science questions to be addressed? Other considerations?

Moon Matrix

For each data type at each site, determine:

Mission **Go**

Mission **No Go**

Need **More Data**

	Highlands	South Pole	Aristarchus	Tranquility	Far Eastern
Water / Other Resources					
Topography					
Temperature					
Radiation					
Science					
Special Considerations					

Team Members:

Team Name:

Chosen Lunar Outpost Site Name:

Chosen Lunar Outpost Site Location (mark on Moon):



Why was this site chosen?