# **CREW MANIFEST MISSION: LUNAR QUEST**

Mission Date: Mission Time: # of Students: \_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_\_\_

Teacher’s Name(s): School:

Please bring two (2) copies of this completed **CREW MANIFEST** with you for the Flight Directors on the day of the mission. Instructions for completing this form are provided on page 2. ***\*Required to fly Lunar Quest***

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|  | TEAM | MISSION CONTROL  (MOON BASE ALPHA) CREW | SPACE CRAFT (LUNAR TRANSPORT VEHICLE) CREW |
|  | **COM** *Communications* | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **NAV**  *Navigation* | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **ROV** *Rover* | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **SW***Space Weather* | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **MED** *Medical* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **ASTRO** *Astrobiology* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **BOT** *Robotics* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **LS** *Life Support* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | **GEO** *Geology* | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

# **Customize Your Crew MISSION: LUNAR QUEST**

The crew is customizable based upon the number and talents of your students. We recommend filling in the teams in a manner that fits the strengths of your students and teaching objectives.

To start, review the team descriptions on page 3. This will provide you with details needed to place your students on the most appropriate team. Then follow the guidelines below for completing the crew form on page 1.

Usually, each team includes at least one student on the Mission Control Crew and one student on the Space Craft Crew.

* Place one student on each crew – Mission Control and Space Craft -- for each team. (Ex: Place one student on the COM team in Mission Control, and one on the COM team in the Space Craft.)
* Once you have assigned one student to the 9 teams of both crews (18 students in total) go back and assign a second student to the other slot for each team. These students will work as partners.
* NOTE: If you have a smaller class but know some students will need the help of a partner, it is okay to pair up some students and leave some jobs empty. Just make sure each starred (\*) job has at least one person in the Space Craft and one in Mission Control.
* Remember each team in the Mission Control Crew must have a corresponding team member in the Space Craft Crew.

If you have questions about completing the Crew Manifest, please contact us at [info@clcstlouis.org](mailto:info@clcstlouis.org) .

# **TEAM DESCRIPTIONS MISSION: LUNAR QUEST**

Review each of these job descriptions to familiarize yourself with the type of work being conducted during the mission.

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|  | TEAM | DESCRIPTION | JOB TITLES |
|  | **COM** *Communications* | * Provide communications support between astronauts and Mission Control. * Manage the distribution of assignments during an event and during some emergencies. * Provide critical ROVER launch information. * Key skills: Comfortable reading out loud; multi-tasking | Audio Engineer  Communications Engineer |
|  | **NAV***Navigation* | * Track satellites to ensure quality communication. * Calculate and plot the course for the Space Craft to reach and navigate on the moon.   Key skills: Efficient worker; comfortable with math | Navigation Engineer  Navigator |
|  | **ROV** *Rover* | * Build and test a remotely operated robot to study the Moon, installing critical equipment and components and retrieving data. * Key skills: Oral communication; dexterity | Aerospace Engineer  Mechanical Engineer  Electrical Engineer  Structural Engineer |
|  | **SW** *Space Weather* | * Examine sun spot activity, solar flares and coronal mass ejections and their effects on satellites and the spacecraft. * Handle preparations for solar flare or space debris emergencies by determining location, severity and effects. * Key skills: Efficient worker; comfortable with math | Electrical Engineer  Solar Astronomer  Physicist  Meteorologist |
|  | **MED** *Medical* | * Monitor the health of the crew with a focus on osteoporosis and radiation. * Run various diagnostics on different team members, blood pressure, monitoring radiation, and heart rate. * Key skill: Comfortable interacting with crewmates | Doctor  Nurse |
|  | **ASTRO** *Astrobiology* | * Study life as we know it and what is necessary for life to survive. * Search for planets that fit the criteria necessary to sustain life as we know it. * Key skill: Data analysis/graph interpretation | Astrobiologist |
|  | **BOT** *Robotics* | * Examine different lunar rocks through the use of robotic arms. * Execute basic programs for unmanned rovers to gather their payloads. * Key skills: Spatial reasoning; high frustration tolerance | Mechanical Engineer  Robotic Engineer  Electrical Engineer |
|  | **LS** *Life Support* | * Work hand in hand with their peers to ensure safe conditions for all team members on the spacecraft. * Manage life support emergencies as they emerge. * Key skill: Compiling data from many sources | Life Support Specialist  Bio-Medical Engineer |
|  | **GEO** *Geology* | * Examine different moon rocks for key elements and minerals. * Research and map possible dig sites for important minerals. * Key skills: Observation | Geologist  Seismologist  Spacecraft Engineer |