



# Extended Mission

24 hour RPG by  
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## 2499: We return home.

The colonies of Mars, born in hope, grew up in pain, despair and hard decisions. Some thought that the nations of Earth had learned their lessons and put aside the bombs forever. As it turned out, "forever" meant just long enough for them to build the Busway and send our forefathers down it - their smartest and brightest, their pride, their best hope - before everything that the Two Thousand knew collapsed at their heels into genocidal fire.

We survived, some of us. We dug into this lye-bitter dust and took from it air to breathe and water to drink, for those who hadn't choked on CO<sub>2</sub> and gone to graves scraped in the red slag while we toiled. We broke down the ships that could have taken us home, to build tools, to make the tools, to build the cities that could lift us again into the heavens.

In 2499, Director Keeton's calculations have convinced the Martian nations that we're ready to turn again to whatever is left of the Earth, as Earth once looked outwards to this worn-down old globe where we stand today. With a stretch, we can reach the Busway and load onto the old shuttlers a few suitcases' worth of cameras, radars and clever processors to go in our stead.

We may not get much. The probes might get killed in high orbit by vampiric satellite-hunters, flying junk that we have no way to detect or track, sleeting radiation in the overloaded Van Allen belts, or our own carelessness with orbital mechanics. It's been almost four hundred years, after all, since people tried this sort of thing.

The landers might not live a minute in the acid rain clouds, the war-dusts and the automated missile defences in the atmosphere, or the absolute unknowns that rove the bombed-out ground.

We've learned, on Mars, the value of sacrifice. We'll send them anyway, for whatever we can get in the descent and the first 24 hours. After that, every hour is a gift. We'll just have to play it by ear.

## Premise

The players take the part of *robotic probes* sent back from the Mars colonies to determine what has happened on Earth.

One participant acts as *Game Master* (GM) who presents the events of the mission to Earth and adjudicates the results of actions. The others (henceforth, simply players) each take the twin roles of one of the semi-disposable space probes sent to Earth and the team of investigators and engineers in Mars Mission Control, under the visionary guidance of Director Keeton, trying to keep the probe running and learn as much as they can, before the broken Earth's dangers beat it to scrap.

## Game Play

### What you need to play

Each player needs

- three eight-sided dice (or other types can be used), which should each be distinguished by a different colour
- a character sheet
- a pen or pencil

### Result registers

Each of a probe's *systems* has a *result stack* of four *result registers*, numbered Result[0] to Result[3]. Each register can be in a *clear* or *set* state.

Result[0] to Result[2] are the *primary*, *secondary* and *tertiary registers*. These record the progress and success of tasks.

Result[3] is the *system available register*. If clear, the probe can use the system. If set, the system is non-operational (offline or damaged).

### Bit-flip task resolution

In order to succeed in a task, a probe must set Result[0], Result[1] and Result[2] for the appropriate system. A task *succeeds* when Result[0], Result[1] and Result[2] are set and Result[3] is clear.

A player changes the state of a register from clear to set by rolling an *odd number* on the die.

- A *primary task* begins with Result[0] to Result[3] all clear. The player rolls three dice in order for Result[0] to Result[2], setting each register if she rolls an odd number.

If part of the result stack is still clear, the player may make another attempt on her next turn by rerolling one, two or all three dice, but must always *clear and reroll each register with a higher number in the stack* as well.

If, after any dice roll, Result[0] to Result[2] all remain clear (no successes), the system *malfunctions*. Result[3] is set and the probe cannot continue with the task. If the probe uses a different system to try the task again, or if another probe attempts the same task, the result stack begins in a clear state (all successes are lost).

Each dice roll, except for emergency tasks as described below, takes *one sol* (Martian day).

- A *secondary task* begins with Result[0] set and Result[1], Result[2] and Result[3] clear. The player first rolls two dice and may continue trying, rerolling one or both dice, until the task succeeds. Secondary tasks don't risk malfunctions.
- A *tertiary, or bit-flip task* begins with Result[0] and Result[1] set, Result[2] and Result[3] clear. The player rolls a die to try to set Result[2] and may reroll until the task succeeds. Tertiary tasks don't risk malfunctions.
- An *extended primary task* requires the player to complete a secondary task, then clear Result[0] to Result[2] and complete a primary task. The GM may instead ask for an *extended secondary task* (a tertiary task leading into a secondary task) for an action that is not particularly difficult or dangerous, but may take a long time.
- If a physical danger appears, the probe may attempt an *emergency task* to use one of its systems to respond in some way as the player devises. The GM specifies whether the action proposed requires a primary or secondary task, then the player may roll three or two dice respectively to try to set Result[0], Result[1] and Result[2].

Due to the light-speed limit on signals between Earth and Mars, both ways, an emergency task represents at least 5 to 15 minutes of time, so typically cannot be rerolled.

An emergency primary task can result in a malfunction.

## Tasks for Earth inhabitants

Some inhabitants of Earth are robotic and use result registers.

Biological creatures don't have registers, but perform all tasks as emergency secondary tasks, rolling two dice and succeeding if both numbers are odd. Unlike robots, biologicals can immediately retry emergency tasks, up to a total of three attempts. Biologicals have *parts*, equivalent to systems, that can take an *injury*, with the same effects as Result[3].

## Turn sequence

Players may take actions in any order they agree upon. After a player has made a dice roll for a task, she may not reroll until the other players have taken their action for that sol or declared an idle.

Emergency tasks interrupt this sequence, whether initiated by the player who has just acted or any other. Any or all players whose probes are at the same game location can attempt one emergency task to deal with the situation, in whatever order they choose.

An Earth inhabitant enters play after a probe has attempted an action that the GM determines will bring it into contact with the creature. After resolving the player's dice roll for the task attempt, all players whose probes are in the same location can attempt emergency tasks to respond, then the Earth inhabitant may attempt an emergency task. If the situation is still unclear after resolving all emergency tasks, the Earth inhabitant can attempt a task (if mechanical) or flee the scene (if biological and still able to do so), then the other players take their turns.

## Typical tasks

*Drive / orbital manoeuvre*: The probe moves to a different location (or begins moving towards a location that is particularly far away or hazardous to approach). The propulsion peripheral system descriptions give typical tasks for driving in different environments, though driving in particular areas may be less or more hazardous.

A change in location represents intent rather than any fixed distance, governing which probes, creatures and significant sites the GM must consider together and able to influence each other.

An orbiting probe can place itself in position to assist rovers at a particular location on the ground, or to examine with its sensors an interesting location on the surface or in orbital space.

*Scan / test:* The probe uses its systems to gather information. A general scan or test might be a tertiary task, while searching for detailed or particular information often is a secondary task. If successful, the GM both describes what the probe's test revealed and awards the probe some Science Return (see *Mission*).

*Manipulate:* Covers a variety of alterations and stratagems that the probe might be able to carry out with the systems at its disposal, whether or not they were designed to be used in such a way. A well-judged manipulation might allow a probe to enter a location otherwise barred to it, or provide a valuable Science Return as the probe's action reveals an important detail.

### Special tasks

*Idle:* A probe may sit idle, taking no action for one sol. This allows other players to reroll without the player taking his turn.

*Recovery:* If a system has Result[3] set due to a malfunction, the probe may attempt a task to clear the system, making it available again for use. The probe may use *any core system* to attempt this task. Clearing a peripheral system is a secondary task. Clearing a core system is a primary task.

*Assist:* A probe can use a peripheral system to try to help another probe in the same location to perform a task (by physical support, scanning with a sensor from a different perspective, or any other action that the GM agrees might help). This is a secondary task for the assisting probe. If successful, it sets Result[2] for a specified task that the assisted probe attempts on the same turn.

*Disable systems:* A creature can use a peripheral system to try to damage another nearby creature. Most often this will happen in the course of interactions with Earth's present inhabitants.

If the task succeeds, a random system of the target suffers Result[3] set or an injury.

For a probe, attacking peripheral systems is a secondary task, or attacking the core systems of another creature is a primary task. A probe can only attack a biological as an emergency task, but may sometimes be able to disable the systems of another robot creature as a normal task.

Robot Attacks on Core Systems (d8)	
1-2	Mission computer
3-5	Power supply
6-8	Heater/Radiator

Robot Attacks on Peripherals (d8)	
1-2	Peripheral #1
3-4	Peripheral #2
5-6	Peripheral #3
7-8	Peripheral #4

A biological creature always requires an emergency secondary task to try to disable systems. It randomly targets either peripheral or core systems.

Biological Attacks (d10)	
1	Mission computer
2-3	Power supply
4-5	Heater/Radiator
6	Peripheral #1
7	Peripheral #2
8	Peripheral #3
9	Peripheral #4
10	Peripheral used for emergency task

*Interfere:* Similar to the assist task, a probe may use an emergency secondary task, using one of its peripheral systems, to try to prevent another creature from succeeding in a task that the player expects the creature to attempt. Most often this will happen as a result of interactions with Earth inhabitants.

If the interfere task succeeds, the creature interfered with must succeed in a bit-flip task (roll one die and get an odd number) to continue its action. This happens instantly, does not delay other dice rolls, and is an exception to the rule that biologicals only use secondary tasks. If the affected creature fails, it doesn't take its dice roll, but can try again to overcome the interference when it is next able to take a turn.

## Characters

### Designing your character

Give your probe a *name*. Assign it *four peripheral systems* from the list below. Every probe also has the same *core systems* and a *low-power antenna*.

Players should work together to design a group of probes with systems that complement each other to investigate a wide variety of Earth environments.



### Orbiters and rovers

All playable probes must be mobile, but viable characters include:

- orbiters, which remain in space using orbital thrusters to change their orbital location, with cameras and radars to collect information and high-gain antennas to send findings to Mission Control, and
- rovers, which land on Earth's surface (with any luck) and navigate using ground, water and air propulsion systems. Most rovers have a sample arm and some sort of camera.

### Core systems

All probes have these core systems:

*Mission Computer:* This system stores Science Return that the probe has collected. If Result[3] set, the probe cannot add or transmit any Science Return but doesn't lose Science Return that it has already stored.

*Power supply:* If Result[3] set, the probe cannot use any peripheral systems or the heater/radiator.

*Heater/Radiator:* In an excessively cold or hot

environment (including outer space), the probe cannot use any peripheral systems if the heater/radiator malfunctions. A player may use a heater/radiator as a peripheral system as well as a core system.

### Peripheral Systems

Each probe has a *low-power antenna*, used to communicate (automatic, or the GM may require a task success in some circumstances) and to transmit Science Return (tertiary task to send, tertiary task to receive) between probes.

*Driving wheels:* Used for driving on land (secondary task).

*Orbital thrusters:* Used for orbital manoeuvres (tertiary task) and can be used to assist an attached probe with the initial (secondary) task for a landing.

*Gas bag:* Allows the probe to float in the air. Use a secondary task to take off or land.

*Propellers:* Used for controlled drives in water (secondary task) or, together with a working gas bag, through the air (tertiary task).

*High-gain antenna:* Used to transmit Science Return to Mars (tertiary task). If Result[3] set, the player can still control the probe, as Mission Control can send basic signals to the probe's low-power antenna or relay through other probes.

*Colour, Near-Infrared or Near-Ultraviolet Camera:* If a probe has no means of vision, all tasks using peripheral systems are extended tasks, or primary tasks if attempted in an emergency.

*High-frequency radar:* Highly detailed view, but easily blocked by light obstructions such as clouds and foliage.

*Low-frequency radar:* Low detail means that any use to assist a rover probe requires an extended secondary task.

*Sonar:* Used for visual tasks by water-going rovers.

*Sample arm:* Used by a rover probe to gather samples, manipulate objects and perform general tasks. If Result[3] set, the probe must use an extended task for any use of a chemical test kit.

*Chemical test kit:* Used to determine the composition of materials placed in the kit by a sample arm. Can produce hot water, concentrated solvents and so on.

*Laser spectrometer:* Used by a rover to determine the composition of nearby objects, or as a minor distraction.



## **Mission**

### **Science Return**

The purpose of a probe's existence is to report to Mars Mission Control as much information as possible about the surface conditions of Earth. A probe scans, tests and manipulates its surroundings to collect Science Return, which it stores in its mission computer and transmits to Mars through at least one probe that has a high-gain antenna. A successful task to investigate a new and interesting area might deliver from 1 to as much as 3 points of Science Return.

### **Primary Mission**

The probes travel from Mars to Earth on the Busway, an ancient network of heavy cargo shuttles constantly circulating in a short-transition, ultra-low-energy orbit. They leave the Busway at high velocity, making course corrections to achieve an interception vector with Earth.

*Orbital insertion:* An orbiter probe must succeed in a primary task to reach a stable orbit around Earth. A malfunction destroys the probe and any other probes attached to it.

*Landing:* A rover probe must succeed in an extended primary task to land safely on Earth. A malfunction destroys the probe.

After making orbit or landing, a probe may scan and test for all it's worth, transmitting the results to another probe with a high-gain antenna to begin providing Science Return.

### **Extended Mission**

On their arrival at Earth, no doubt the GM has arranged for the probes to detect various puzzling, anomalous and potentially dangerous places for them to follow up, within a week or two's hard drive, as well as hazards and denizens of the ruined Earth to test their ability to remain intact with the relatively puny instruments that they carry. If they

survive, the players may uncover true mysteries and wonders of the homeworld.

### **Strategies**

Unlike many conventional cooperative games that assume the players' personas will travel together through the same game locations, in *Extended Mission*, it may be advantageous to divide the probes at Mission Control's disposal to cover a number of different regions of Earth.

The home planet's environment has terrible dangers that can trivially disable a probe, or almost as easily, dispose of a concentrated band of them. Provided that the mission continues to provide Science Return from other, undamaged probes, Director Keeton may be able to send a replacement.

In any case, in the first few sols of the mission, players may not have a choice, if different probes take several attempts to complete a stable orbital insertion or landing.

Coordination with orbiters may make a vital difference to the success of ground rovers, though they neither share the dangers of the surface, nor can give direct physical help. The players will have to decide how to move orbiters to interoperate with different rovers, or whether to risk orbiters to investigate peculiar surface regions or objects in orbital space.

## Funding

Through ongoing Science Return, Director Keeton can justify to the Martian people the heavy spending to support continued operation of the time-expired Earth probes. The GM should record the total amount of new funding against the Science Return that the mission so far has collected.

*Improved software:* Research efforts on Mars can provide cleverly designed software patches to upgrade the performance of one nominated probe's systems. Players should agree what kind of improved system software to develop and who should receive it. One of the probes must attempt a secondary task using a high-gain antenna to receive an improved software patch, then may transmit it to the intended probe through its low-power antenna.

An improved core system requires only a secondary task to recover from a Result[3] set state.

An improved peripheral system shifts all secondary tasks using the system to tertiary tasks.

Developing an improved software patch requires 6 points of Science Return. Mission Control can adapt an improved software package for the same type of system on another probe for only 3 Science Return.

*Launching new probes:* When the program attains a Science Return of 12, Director Keeton can authorise activation of a back-up or follow-up probe, already loaded on the Busway, which can attempt an Earth orbital insertion or landing in 5 sols. Players should design the new probe together and agree who will control it.

## Dangers of Earth

Many Earth inhabitants have peripherals that are specifically designed to damage other creatures (weapons). These might be effective either in close combat or at range, where it's unlikely that a probe can attack in return.

### Robots

*Security camera:* Core: Mission computer, power supply, heater/radiator if required. Peripherals: Monochrome video camera, low-power antenna. Scans visually for intruders and sends alerts to a monitoring station, which may bring other inhabitants, if anyone is there to watch it.

*Patrol robot:* Core: Mission computer, power supply, heater/radiator if required. Peripherals: Driving tracks, monochrome video camera, low-power antenna. Moves around to find intruders and may carry weapon systems.

*Anti-missile installation:* Core: Mission computer, power supply (improved), heater/radiator if required. Peripherals: Radar, ground-to-air ranged weapons, low-power antenna. Attacks airborne objects.

*Anti-satellite hunter-killer:* Core: Mission computer, power supply, heater/radiator. Peripherals: Orbital thrusters, radar, long-range video camera, kinetic-kill weapon. Attacks active electronic devices in orbit. Its weapon requires a secondary task to damage core systems and destroys the hunter-killer on a successful hit.

### Biological creatures

*Carnivore:* Core parts: Torso, head. Peripheral parts: Eyes, jaws, legs. A dangerous land biological.

*Bird:* Core parts: Torso, head. Peripheral parts: Eyes, beak, wings, talons. Flies through the air and may attack floating probes, or dive on ground rovers.

*Alligator/Anaconda:* Core parts: Torso (improved), head. Peripheral parts: Eyes, jaws (improved), tail (improved), legs for alligator. Dangerous both on land and in the water.

*Survivor:* Core parts: Torso (improved), head. Peripheral parts: Eyes, mouth, legs, hands. A human nomad and scavenger of variable technological understanding and unpredictable reactions. May carry weapons.

### Hazards

*Radiation pockets:* Probes in heavily irradiated areas risk random glitches or even systems flipping to safe-mode. All tasks become primary tasks. Biologicals are rare, but any encountered might be exceptionally dangerous.

*Steep terrain:* These areas of natural rock or rubble are difficult to drive through, risking falls, flips and trapped wheels. Driving through steep terrain is a primary task. Airborne probes can bypass steep terrain.

*Water bodies:* This hazard, unfamiliar to Martians, generally blocks wheeled probes. Driving out of or through standing water requires a primary task using the power system, followed by a primary task using wheels. Probes with propellers can move easily in water, while airborne probes can drift over it.

*Weather:* Another novel danger, high winds and precipitation interfere with movement, scanning and physical actions, requiring a probe to succeed in a bit-flip (roll one die and get an odd number – not an emergency task and doesn't delay other dice rolls) to attempt these tasks. Probes travelling through the air or water during inclement weather must complete a primary task. Low-frequency radar penetrates bad weather, but most other remote sensors must first complete a secondary task before they can attempt a scan.

## **Sample Earth Location: New York**

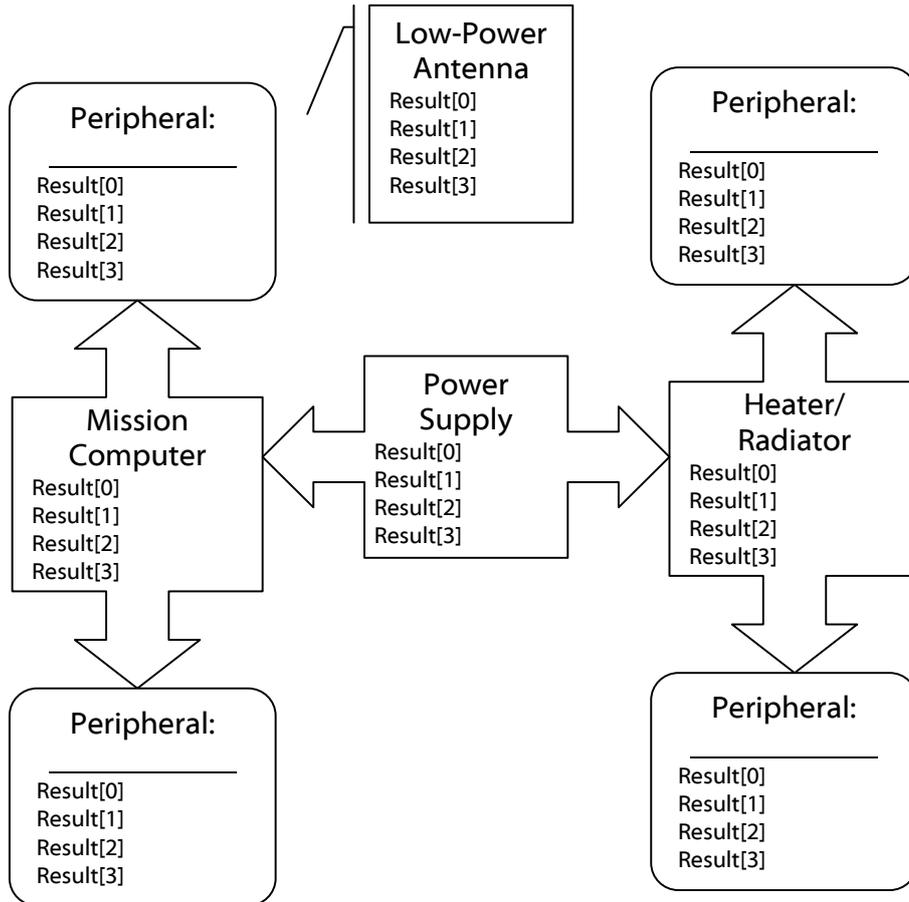
(For maps of the city's pre-war layout, see [maps.google.com](https://maps.google.com), etc.)

Players could decide to attempt separate landings in Brooklyn and the Bronx, avoiding the La Guardia crater visible in Mars-based telescopes.

After a side trip to Coney Island, rubble, radiation and carnivore packs interfere with their attempts to discover if any of Manhattan's bridges or even tunnels remain intact, before trying to trace a mysterious transmission from Liberty Island, or venturing across the Hudson into the survivor camps of New Jersey.

# Extended Mission Character Sheet

Probe Name: \_\_\_\_\_



2499: We return home.

