

C. Mysterious Light Tunnel

An orbiting satellite has established the presence of a straight tunnel containing strange glowing rocks in the ceiling of the tunnel. The rocks glow in the visible region of the light spectrum. The tunnel is sufficiently wide to be negotiated by the Rover.

Your task is to enter and travel the length of the tunnel, recording the position and brightness (relative to the star light measured outside the tunnel) of the glowing rocks. The position of the rocks should be recorded as a distance in centimetres from the start of the tunnel.

Procedure:

1. The rover will already be in the best place to start your exploration. However you will need to line up with the entrance rather accurately.
2. Record the rock glow light strength at this “outside tunnel” location.
3. Progress through the tunnel by travelling in the same direction in which the Rover was pointing at the start of the mission.
4. Measure your passage through the tunnel.
Record the distance travelled along the tunnel when you detect the peak signal of the radiation from any detected glowing rocks.
5. When your rover has reached the end of the tunnel, observed when the glow light signal returns to that measured in step 3.
6. From the information you have gathered determine the distance travelled from the entrance of the tunnel before the brightest and dimmest rock glow lights were detected.
7. A strange phenomenon of the tunnel is that some of the rock glow lights change brightness once the end of the tunnel has been reached.
8. Driving in reverse through the tunnel repeat steps 6 through 7 and determine which two rock glow lights’ brightness have changed significantly, again determining their distance from the **entrance** of the tunnel.
9. Do not start your next task until you have confirmed that the Mission Director has recorded your team’s score for this task.

Achievement	Score
Correctly determining the number of lights in the tunnel	+1
Correctly determining the distance (+/- 5cm) from the entrance of the brightest light	+1
Correctly determining the distance (+/- 5cm) from the entrance of the dimmest light	+1
After the end of tunnel has been reached, correctly determining the distance (+/- 5cm) from the entrance of the tunnel of a rock glow that has changed	+1
After the end of the tunnel has been reached correctly determining the distance (+/- 5cm) from the entrance of the tunnel of another rock glow that has changed	+1

Scoring: