Spatial Vortex Survival

Last year's Rover mission to the Planet encountered a two dimension spatial vortex impeding its progress. Located at the crest of a steep narrow trail, the vortex must be traversed to explore further large areas of the Planet in the valley beyond.

Whilst in the centre of the vortex the Rover will rapidly rotate for a short time. Once the rotation has stopped the Rover may continue its mission, however some spatial displacement has taken place whilst in the vortex and the Rover must reorient itself to achieve the correct exit route. Attempting to exit the vortex in the wrong direction will result in severe damage[1] to the Rover.

The start of the trail is located at a position which will be indicated in start position units on the mission data sheet distributed at the start of the mission on the planet. Your task is to characterise the vortex and successfully traverse it with the correct orientation.

Procedure:

1. Navigate your rover to the start of the trail and orientate its direction of travel to enter.
2. Drive your Rover 60 cm forwards into the vortex and stop.
3. At this point, and until step 5, do not attempt to move your Rover.
4. At some point in time the vortex will cause the rotation of your Rover, record the number of complete rotations made by your Rover.
5. When rotation has stopped, turn your Rover to an orientation compatible with returning in the direction your arrived and return your Rover to the start position (step 1), to complete the task.
6. Display the number of rotations recorded on your Earth station for verification by the Mission Director, or his assistant, record the number for later inclusion in your project report.
7. Do not start your next task until you have confirmed that the Mission Director, or his assistant, has recorded your team's score for this task.

Scoring:

Achievement	Score
Successfully driving to and stopping in the vortex	+1
Successfully counting the number of rotations performed in the vortex (+/1 1 rev)	+1
Successfully orientating the Rover for exiting the vortex	+1
Returning the Rover to the start position	+1
Return to the start position facing in the opposite direction to that at the start.	+1

[1] Because dents lose prizes! … what do dents do?