

NASA Mars Program Office Statement Regarding Mars 2020 Landing Site Selection

The recent announcement of joint NASA-ESA interest in Mars Sample Return offers welcome confirmation that samples collected by Mars 2020 are a likely target for return to Earth. The most ambitious notional timeline for MSR would launch in 2026, with the sample return lander (SRL) arriving at Mars six years after the landing of Mars 2020. If executed, this timeline could allow the Mars 2020 rover to play a role in the sample retrieval process, either as a baseline plan or a contingency plan.

The possibility of Mars 2020–SRL interaction raises the question of whether the landing site selection process should include any criteria to facilitate such interaction. In the absence of concrete knowledge of the SRL capabilities, it would be premature to impose restrictions on landing site selection. Thus, the Mars 2020 landing site selection process should identify the site that offers the most scientifically compelling and diverse set of samples for potential return. The selection process should not evaluate the sites against speculative SRL capabilities. Similarly, it would be premature to evaluate any specific strategy for disposition of samples (e.g., dropping in a depot, carrying on board, etc). Ultimately, the location of the depot(s) will be coordinated between Mars 2020 and the Mars Program Office.

Collection of the full complement of up to 42 sample tubes by Mars 2020 will undoubtedly take longer than the baseline mission of 1-1.5 Mars years. While targets remote from the landing site are thus of interest, in recognition that the highest probability for successful Mars 2020 mission operations occurs early in the mission, higher weight should be applied to targets close to the landing ellipse.