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On February 18, 2021 NASA's Perseverance rover landed in Jezero Crater where the floor consists of various rock lithologies and abundant regolith. Using the rover's imagery and the LIBS and VISIR spectroscopies from SuperCam, we focus on the chemistry and mineralogy of coarse-grained regolith. Such regolith has been observed all along the rover traverse since the landing: it is widespread either on flat surfaces/rocks or in aeolian ripples. This coarse regolith is composed of rounded granules rather homogeneous in size (~1-2 mm), shape (nearly isotropic) and color. Some VISIR spectra are highly consistent with the presence of olivine in the regolith. No hydration band is detected, and no H is detected by LIBS, suggesting that this olivine is rather pristine. SuperCam LIBS has a laser spot size of 300 mm and is operated by performing rasters of up to 10 sampling points, each accumulating up to 50 laser shots. Combining high-resolution RMI images with microphone recordings during the laser shots, we can assess whether the LIBS laser sampled dust/fine sand or granules during the shot series, and if the laser significantly ablates a granule. Careful analysis of the LIBS spectra and derived chemical compositions, including comparison with data from calibration targets and shot to shot variability, reveal the presence at the LIBS spot size of (i) olivine only, (ii) olivine and andesine mixtures, and (iii) other assemblages including the former and/or other minerals such as pyroxenes. Most olivine grains are Fo# 60-75, but locally some grains may be lower Fo#; they all exhibit low content of Cr and Mn, Ni is below detection limit. Interestingly, this coarse regolith displays a different chemistry and mineralogy compared to the surrounding rocks raising questions about its provenance. The rover is currently making its way toward the adjacent Seitah unit which is a possible source as it may contain olivine based on orbital data. There are also some differences in composition between these granules and the finer fractions of the regolith. All these data will be compared to orbital data and observations by Curiosity on similar coarse-grained regolith at Gale crater. They will also be discussed in light of knowledge from Martian meteorites to place constraints on the formation of olivine and magmatic processes on Mars.

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