

Supplemental Materials

Figure DR1 provides scale of images and pixel sizes in those images.

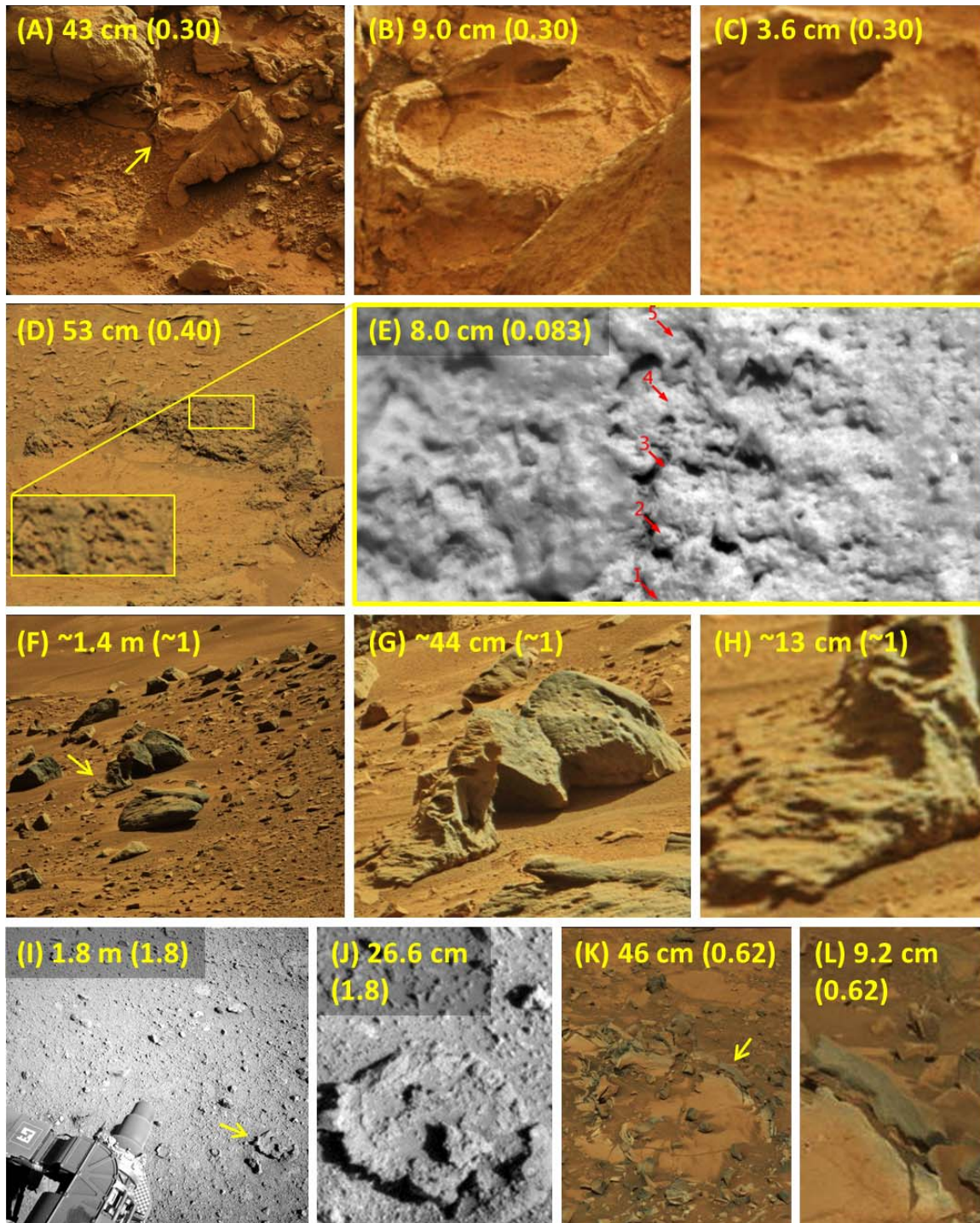


Figure DR1. Supplementary information on grain size of features presented in Figures 2-3 in the main text. Each row in the present figure highlights a specific feature with the full-frame image (Mastcam-100 or Navcam) to the left and magnified images of that feature to the right. The lower-most row is organized in a slightly different way, as it highlights both a Navcam and a Mastcam feature. In each image we specify the width of that image at the location of the highlighted feature and, in parenthesis, the spatial resolution [mm/pixel] of that image (as acquired on Mars). As a general rule, features must extend a minimum of 2-3 pixels in order to be recognizable by the human eye. Hence, these images together with their pixel scale provide an upper bound to the size of grains that make up the corresponding sedimentary feature.

A-C: Circular feature observed on sol 172 (compare Fig. 2B). Interior and rim of that feature have a knobby texture (C), with mm-sized knobs imbedded in (or bound to the surface of) a fine-grained bulk rock. The latter is composed of non-resolved grains and might be similar to the Sheepbed mudstone. Since the feature is located right at the contact between Sheepbed and Gillespie member (Grotzinger et al., 2014) it might actually combine properties of the Sheepbed mudstone with those of the overlying Gillespie sandstone (image ID: 0173ML0009261020105119E01).

D-E: Circular feature informally called ‘Tappers’ near the Dingo Gap dune (compare Figs. 3B-C; see also Wiens et al., 2015). (D) Mastcam-100 image of Tappers (image ID: sol 529, 0529MR0020930010303343C00), and (E) shows the highest-resolution image that has been acquired of that feature (Remote Microscopic Imager, image ID: sol 530, CR0_444541206PRC_F0260184CCAM03530L1). The inner wall of Tappers displays knobs (0.5 to 1 mm) and highly irregular voids (1 to 6 mm); both textural features are

associated with a fine-grained matrix whose grains cannot be resolved.

F-H: Unnamed deformational structures (compare Fig. 3E) with elongated (several cm long, several mm wide) flow-like features (image ID: sol 533, 0533MR0021110030303401E01).

I-J: Cylinder with internal concentric or eccentric layering (compare Fig. 3F) (image ID: sol 542, NRB_445615810EDR_F0261274NCAM00353M_).

K-L: Circular structures named 'Hewolf' (compare Fig. 3F). The image, acquired at a spatial resolution of ~0.6 mm/pixel, shows a visually homogeneous rock with no imbedded clasts and with a perfectly even surface. Hence the grains making up that sediment are most likely very much smaller than 1 mm (image ID: 1051ML0046250040306086E01).

Credit: NASA/JPL-Caltech/MSSS.

Reference

Wiens R.C., Maurice S., Gasnault O., Clegg S., Fabre C., Nachon M., Rubin D., Goetz W., Mangold N., Schroeder S., Rapin W., Milliken R., Fairen A.G., Oehler D., Forni O., Sautter V., Blaney D., Le Mouelic S., Anderson R.B., Cousin A., Vasavada A., and Grotzinger. J.P., 2015, Centimeter to decimeter size spherical and cylindrical features in Gale crater sediments: Houston, Texas, Lunar and Planetary Institute, Lunar and Planetary Science XLVI, abstract 1249.