Your PLANETS Science Data Packet

for:

Worlds Apart! Remote Sensing of Mars

Activity 3
Landforms on Mars

Map of Mars

Map of Mars

Map of possible Mars landing sites. Gale Crater is near the equator; Jezero Crater is farther north.

Gale Crater—Gale is a crater 96 miles (154 km) across. The middle of the crater has a mountain that is 3.4 miles (5.5 km) tall. The possible landing site is in the northwestern part of the crater and includes the crater floor and the hills near the central mountain.

Jezero (Jez-er-oh) **Crater**—Jezero is a crater 30 miles (39 km) across. The possible landing site is in the western part of the crater.

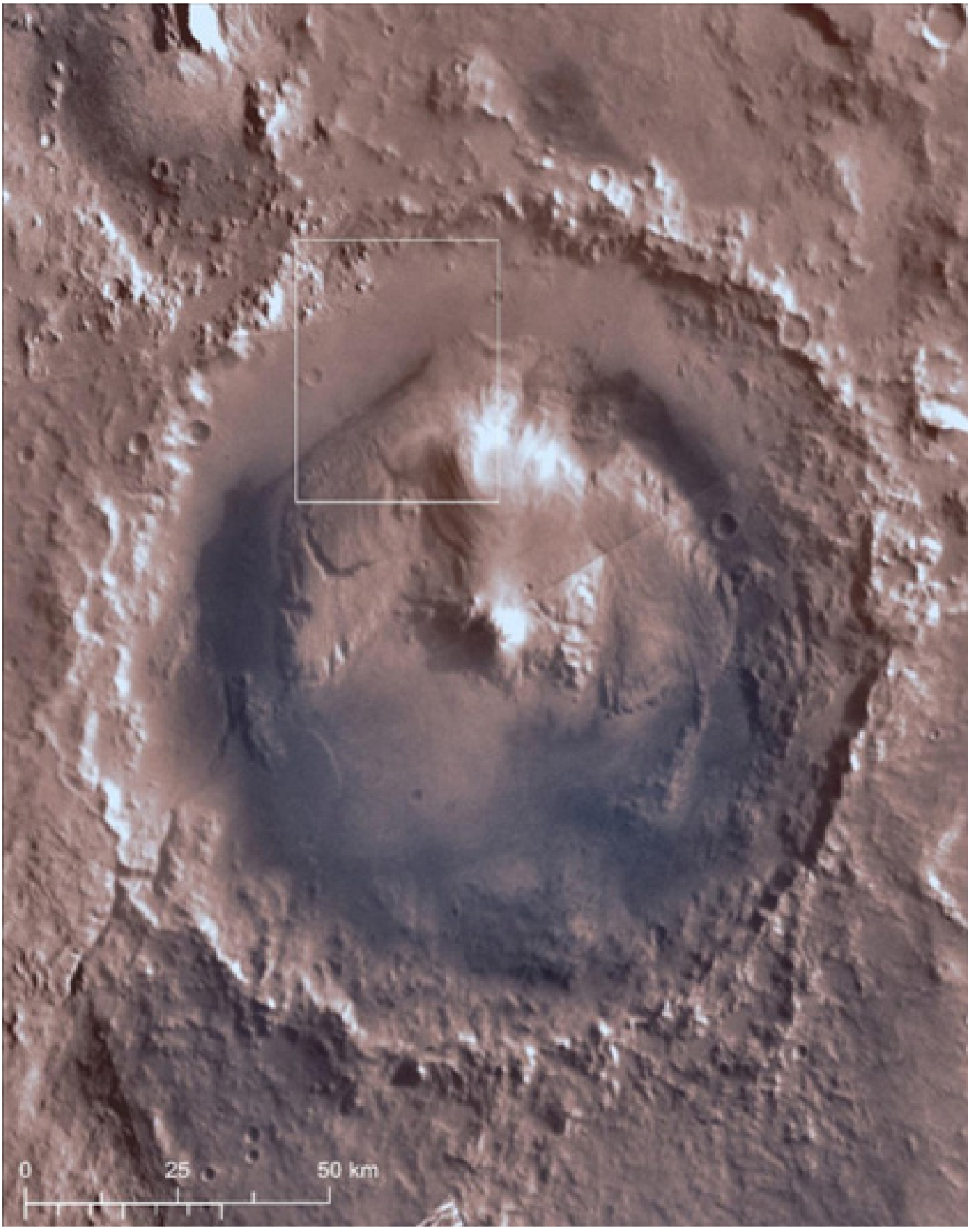
Gale Crater:

Viking Data

True color visible light image of **Gale Crater** from the Viking orbiter. The box shows the area of interest. The center of the crater contains a mountain with several canyons on its sides.

Do not place an oval on this image.

See next page for image.



Gale Low-Resolution Images. Source: Viking Orbiter

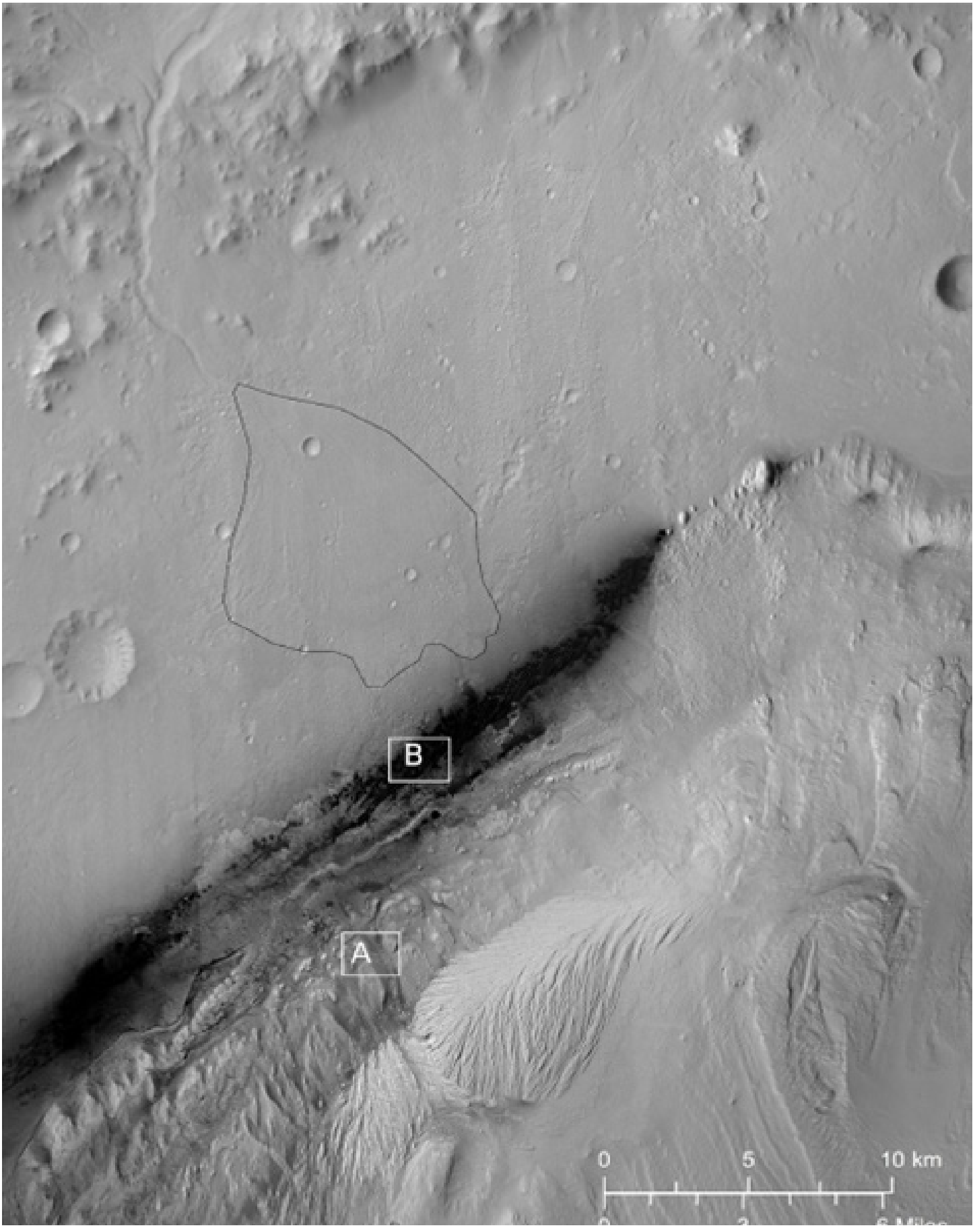
Context Camera (CTX) Data

Black and white zoomed-in image of the **Gale Crater** site taken by the Context Camera (CTX) and High Resolution Imaging Science Experiment (HiRISE) cameras on the Mars Reconnaissance Orbiter.

✦ Place your oval on this image.

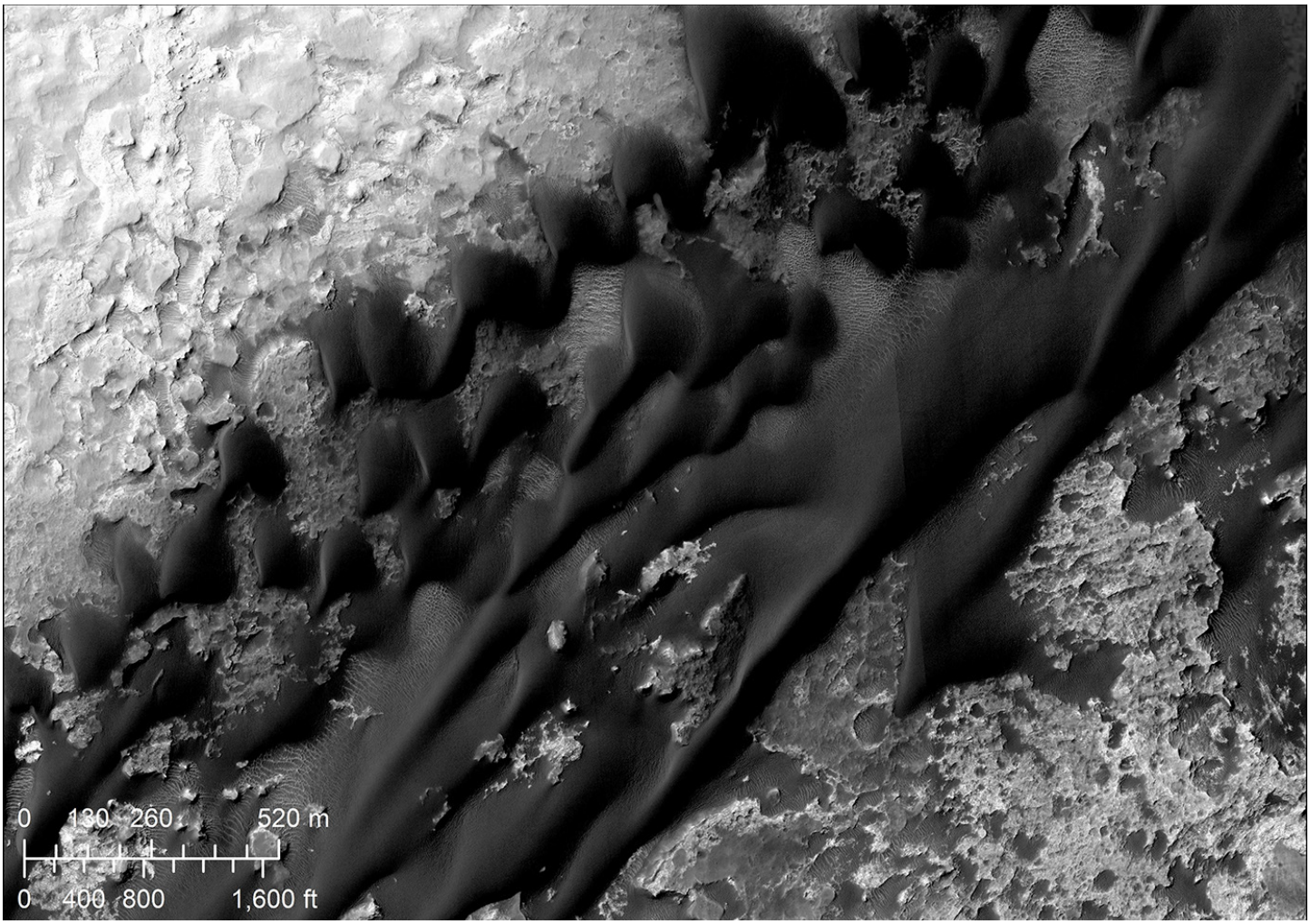
A valley extends from the foothills of the crater rim in the upper left down to the flat crater floor where it joins up with a fan-shaped landform that has been outlined in black. Both the alluvial fan and the surrounding crater floor are dotted with small bowl-shaped craters. Cutting through the middle of the image from northeast to southwest is a band of black sand dunes. Running parallel to the southern side of the dunes is a bright ridge of rock. In a broad band south of the bright ridge and the dark dunes, but parallel to them, the terrain is rugged, with many hills, buttes, and mesas formed from layered rocks. The image is about 35 km (22 miles) across.

→ *See next page for image.*



Gale Images. Source: High Resolution Imaging Science Experiment (HiRISE) and Context Camera (CTX)

Black and white image of part of Gale Crater, about 2.7 kilometers wide by 1.9 kilometers tall. From the southeast to the northwest is a river channel filled with darker rock and sand. The channel cuts through layers of dark gray and light gray. To the east and west of the channel, these banded rocks rise up to form prominent mesas. In the southeastern corner of the image, some light-toned sand dunes are visible in the valley, partly burying the sediment-filled river channel.



Black and white image of part of Gale Crater, about 2.7 kilometers wide by 1.9 kilometers tall. Dark sand dunes run from northeast to southwest. The dunes range in shape from long and narrow, to teardrop or “Pac-Man” shapes, with the “mouth” pointing toward the south. The overall appearance of the dune field is reminiscent of drips of wax accumulated on a candle, with a sense of “flow” toward the southwest. The rock exposed beneath the dunes in the northwest and southeast is rough in texture, with small pits and craters filled with dark sand from the dunes.

Jezero Crater

Viking Data

True color visible light image of **Jezero Crater** from the Viking orbiter. The eastern and western rims of the crater are cut by canyons. The box shows the area of interest.

Do not place an oval on this image.

See next page for image.

Jezero Low-Resolution Images. Source: Viking Orbiter

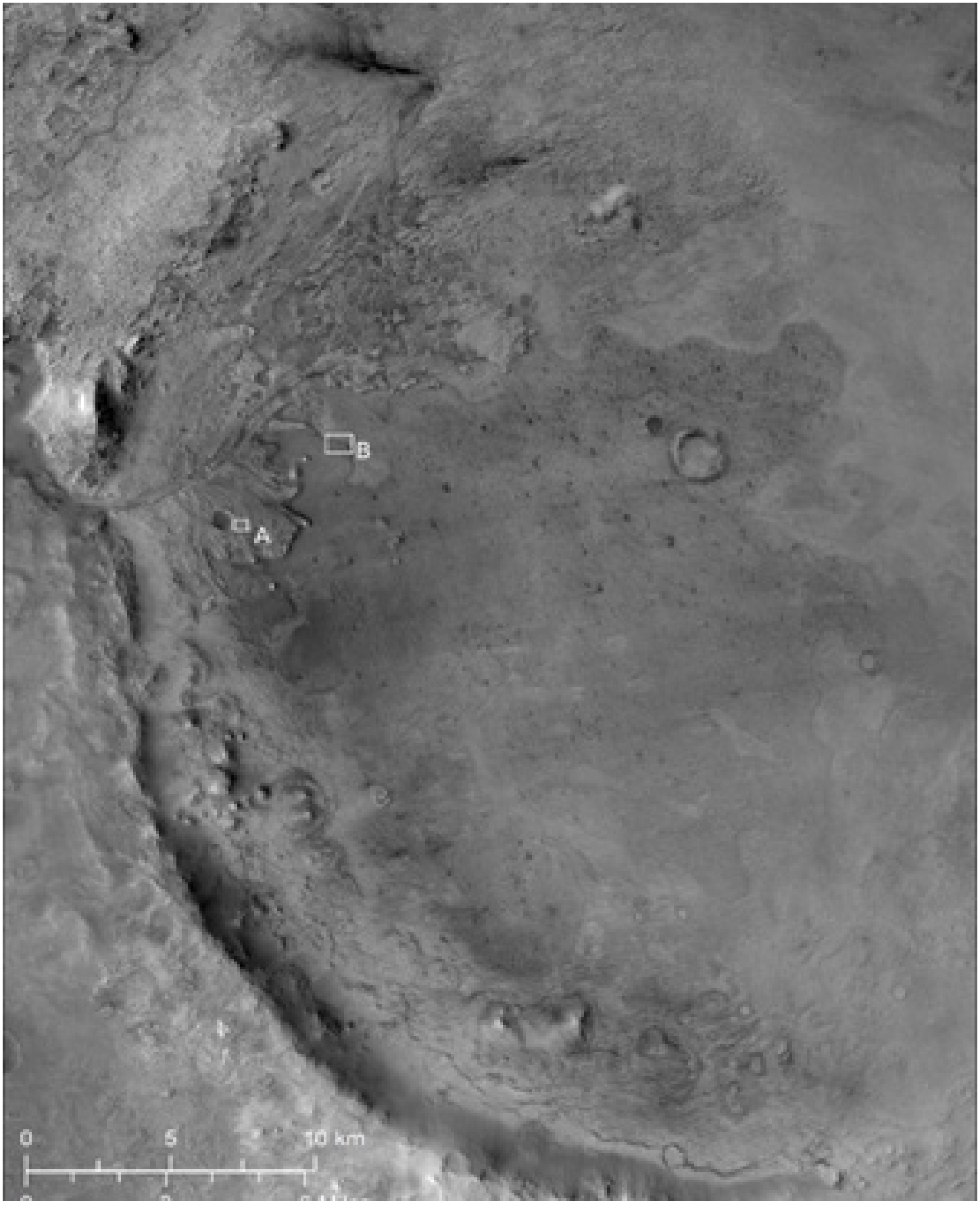
Context Camera (CTX) Data

Black and white zoomed-in image of the **Jezero Crater** site taken by the Context Camera (CTX) onboard the Mars Reconnaissance Orbiter.

Place your oval on this image.

Black and white image of the Jezero Crater site. The crater rim forms a circle of mountains that touches the western and southern edges of the image. The eastern crater rim is outside the area shown. A valley cuts through the middle of the western crater rim and leads to a raised delta deposit. Most of the crater floor is smooth terrain with many small craters. Northeast of the delta, and farther out on the crater floor, there is a lighter-colored area without craters on it that interrupts the cratered plain forming a curving boundary that looks like the edge of a lava flow. Several rounded hills sit inside the western and southern portions of the crater rim.

See next page for image.

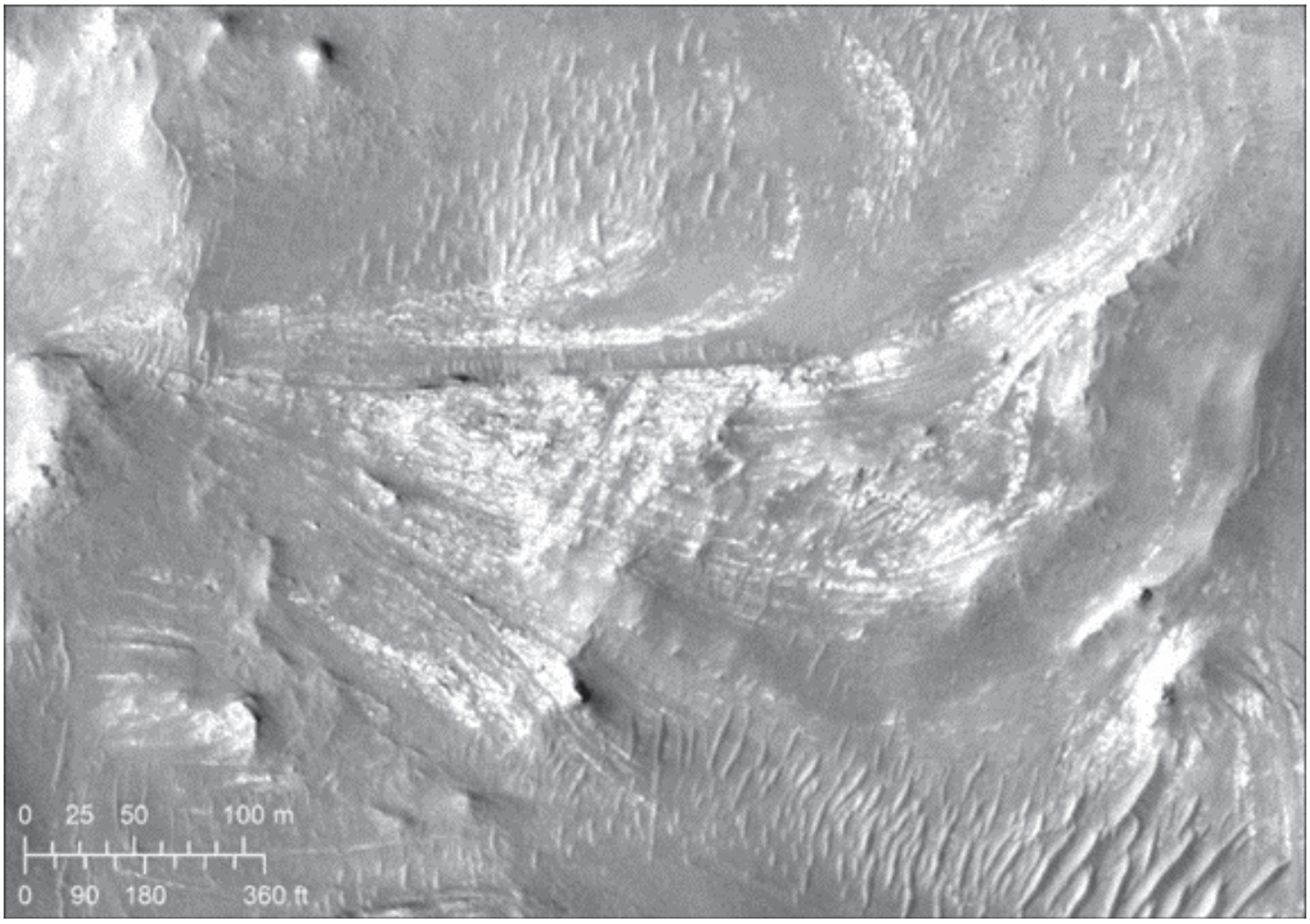


Jezero - Images. Source: Context Camera (CTX)

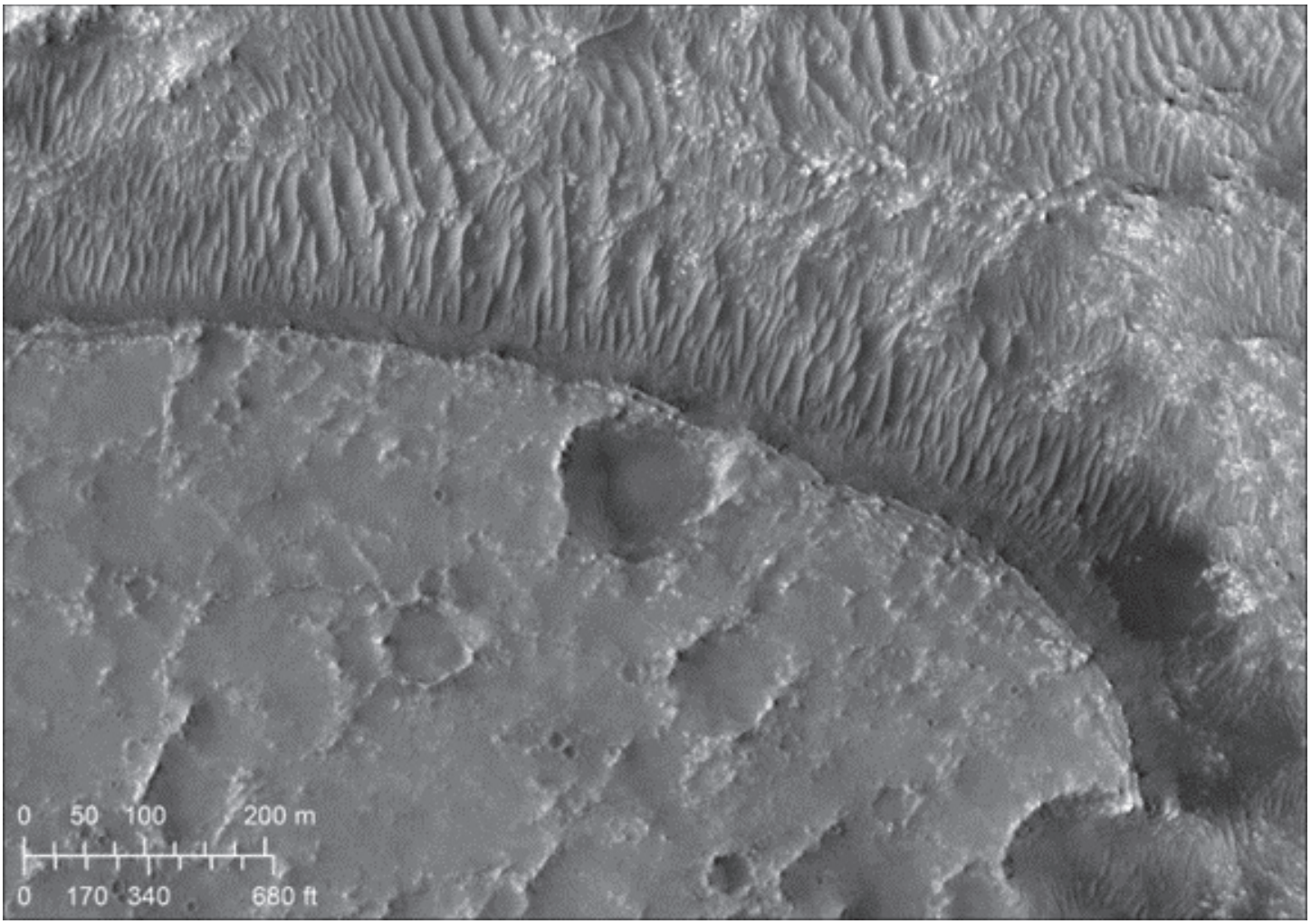
High Resolution Imaging Experiment (HiRISE) Data

Black and white very zoomed in images of the **Jezero Crater** site taken by the High Resolution Imaging Experiment (HiRISE) onboard the Mars Reconnaissance Orbiter.

Do not place an oval on these images.



Black and white image of part of the Jezero Crater site. The image is about 600 m wide by 420 m tall. The image has sets of bright, curving rock layers: the most prominent set forms a pattern similar to a backwards Nike "swoosh" logo, with lines drawn along its length, following its curves. In the north and south of the image the bright rocks are partly hidden under loose sediment that forms small sand dunes.



Black and white image showing part of the Jezero Crater site. The image is about 1.1 km wide by 760 m tall. The southwest portion of the image is filled by a large, dark, relatively flat lava flow surface with a rounded outline. The lava flow ends in a small cliff that curves from above the middle of the left side of the image down to just to the west of the lower right corner. The lava flow has numerous craters ranging from 10s to 100s of meters in size. On the north side of the curved lava flow boundary, there are many small sand dunes. The terrain below the sand dunes and at the northern part of the image is rougher, lighter, and less cratered than on top of the lava flow.