



Figure 2. Photomosaic showing landing site area. Ledges and blocks on rim and flanks of volcano may have formed by intracrustal bulging and outward thrusting near its edge. Locations of figures 3, 4, 5, and 6 of this sheet are also shown.

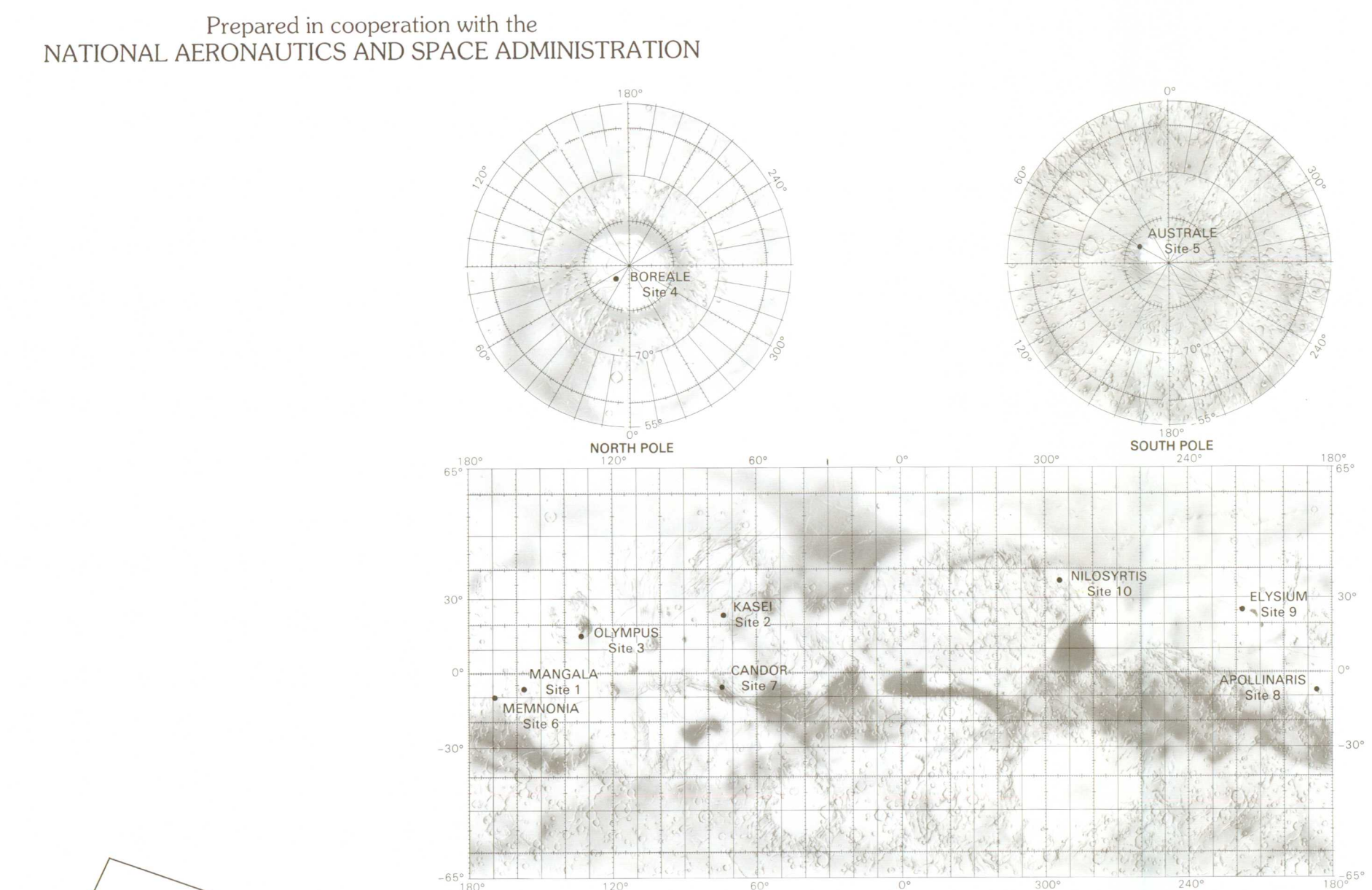


Figure 1. Planned science study areas on Mars that include candidate landing sites for future sample return missions.

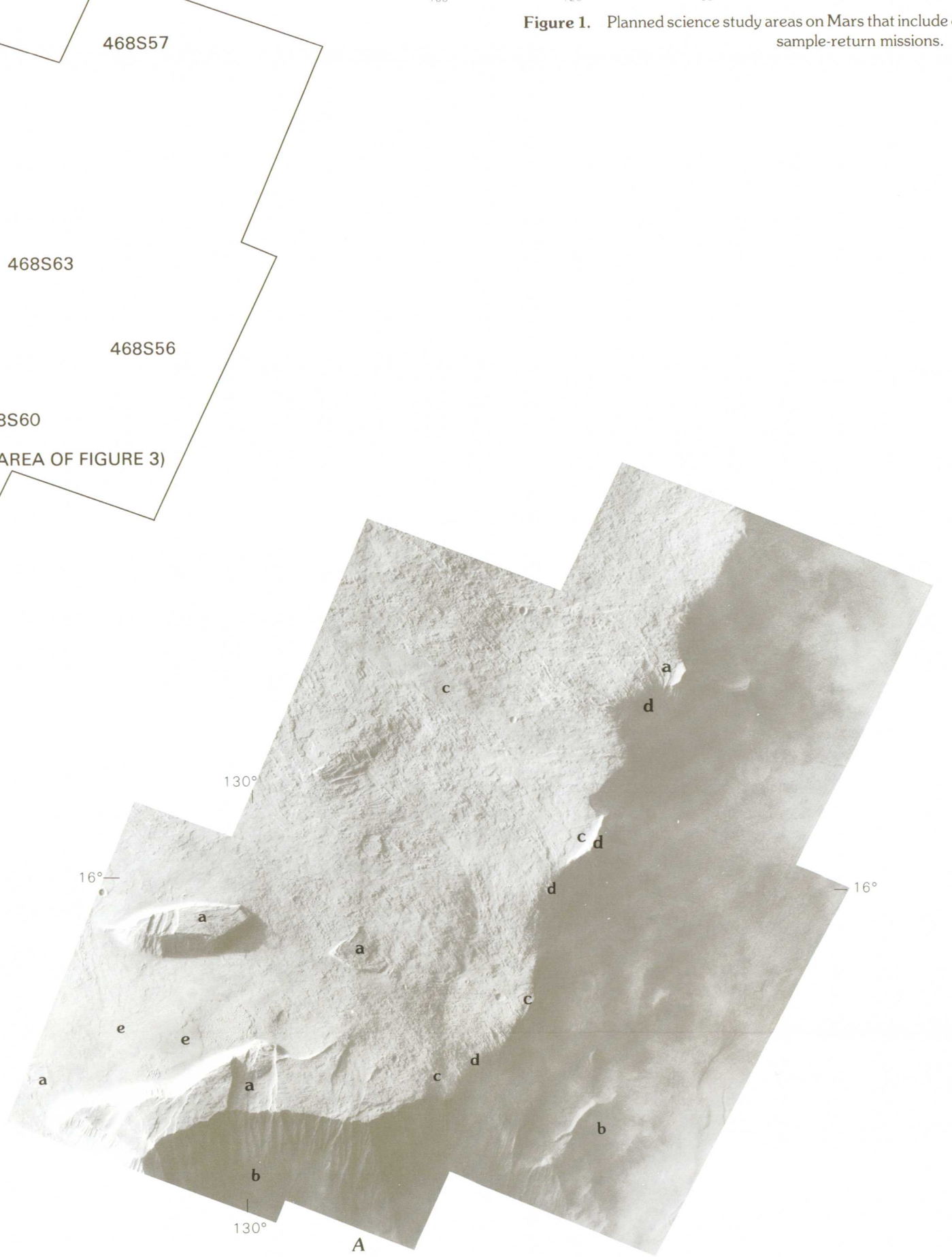


Figure 3. High-resolution mosaic (A) and geologic map (B) of part of the Olympus Rupes scarp, in the eastern part of the map area (see fig. 2 for location). Resolution of mosaic (Viking Orbiter images 468556, 57, 60, 61, 62, 66) is about 30 m/pixel. Rocks (a) exposed in scarp and along its rim probably also underlie Olympus Mons in this area. Unit Nu1 may also be found as blocks on lower flanks of Olympus Mons, 10 to 20 km from scarp rim, where it is partly buried by lava flows. Material appears crudely layered; some surfaces are broken into steps and ledges. Fractures and gullies identify material as HN1. Material (b) on older basaltic plains (a) may be exposed in lower part of scarp. Lava flows or other volcanic materials (c) that formed precarpy flanks of Olympus Mons are also exposed along scarp rim and amid some younger postcarpy lavas (d). Younger postcarpy lavas (d) flowed over scarp; in places were provided behind upland scarp rim and behind blocks of fractured plains material. Width of individual frames in the mosaic above 41 to 51 km of Martian surface. Unit HN1 equivalent to (a) in figure 3A, unit Nu1 equivalent to (b) and indicates unknown materials probably of Noachian age; unit Aom1 (c), unit Aom2 (d), and unit Aom3 (e). See sheet 1 for explanation of geologic symbols.

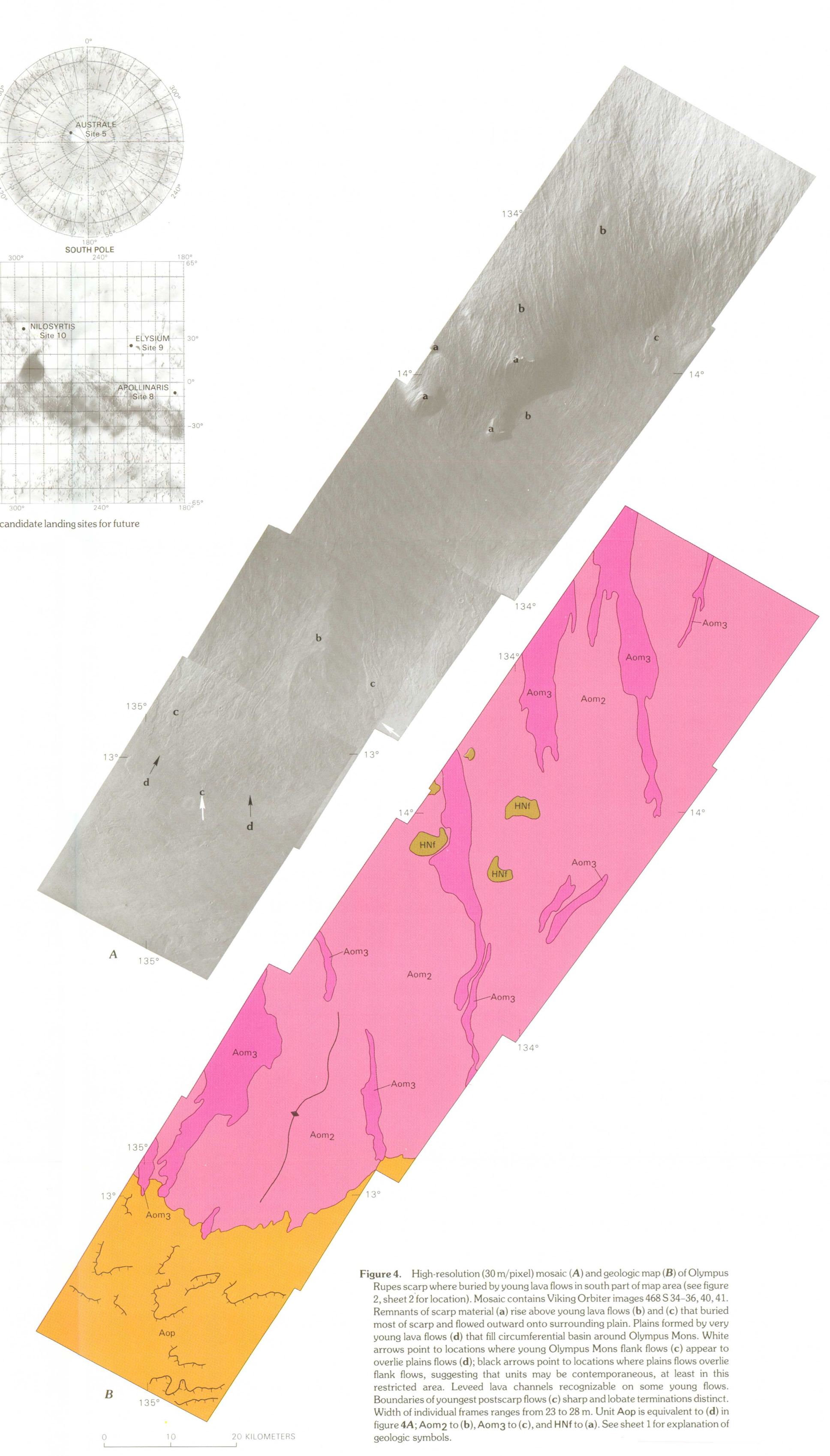


Figure 4. High-resolution mosaic (A) and geologic map (B) of Olympus Rupes scarp where basins by young lava flows to south part of map area (see figure 2, sheet 2 for location). Mosaic contains Viking Orbiter images 468534, 36, 40, 41. Remnants of scarp material (a) rise above young lava flows (b) and (c) that buried most of scarp and flowed outward onto surrounding plains. Plains formed by very young lava flows (d) that fill circumferential basin around Olympus Mons. White arrows point to locations where young Olympus Mons flank flows (c) appear to overlie plains flows (d); black arrows point to locations where plains flows overlie flank flows, suggesting that units may be contemporaneous, at least in the restricted area. Leveled lava channels recognizable on some young flows. Boundaries of youngest postcarpy flows (e) sharp and lobate terminations distinct. Width of individual frames ranges from 23 to 28 m. Unit Aom1 is equivalent to (d) in figure 4A, Aom2 to (b), Aom3 to (c), and HN1 to (a). See sheet 1 for explanation of geologic symbols.

**Table 1. Materials to be sampled at stations of proposed landing site (see fig. 5). Map units identified on sheet 1.**

Station number	Map unit	Description
Landing site 1	Aom	Young basaltic plains flow
2	Aom	Young basaltic plains flow, underlies flow at station 1
3	Aom	Young basaltic plains flow
4	Aom	Young basaltic plains flow
5	HN1, Aom1	Talus from Hesperian Noachian fractured material and earliest precarpy basaltic flank flows
6	HN1, Aom1	Talus from fractured material and earliest precarpy basaltic flank flows
7	Aom	Young basaltic plains flow
8	Aom	Young basaltic plains flow
9	Aom2	Talus of young basaltic flank flows
10	HN1, Aom1	Talus from Hesperian Noachian fractured material, older basaltic flank flows
11	HN1, Aom3	Talus from fractured material; young basaltic flank flows
12	HN1, Aom1	Talus from fractured material and older young basaltic flank flows
13	Aom	Young basaltic plains flow
14	HN1, Aom1	Talus from fractured material and older basaltic flank flows
15	Aom	Young basaltic plains flow
16	HN1, Aom3	Talus from fractured material; youngest basaltic flank flow
17	HN1, Aom3	Talus from fractured material; youngest basaltic flank flow
18	HN1, Aom1	Talus from fractured material; youngest basaltic flank flow
19	Aom, Aom3	Young basaltic plains flow; youngest basaltic flank flow
20	Aom3	Young basaltic plains flow; youngest basaltic flank flow
21	Aom3, Aom	Contact between young basaltic flank flows and young basaltic plains flow
22	Aom	Young basaltic plains flow
23	Aom	Young basaltic plains flow
24	Aom	Young basaltic plains flow; appears to overlie flows at stations 22 and 23

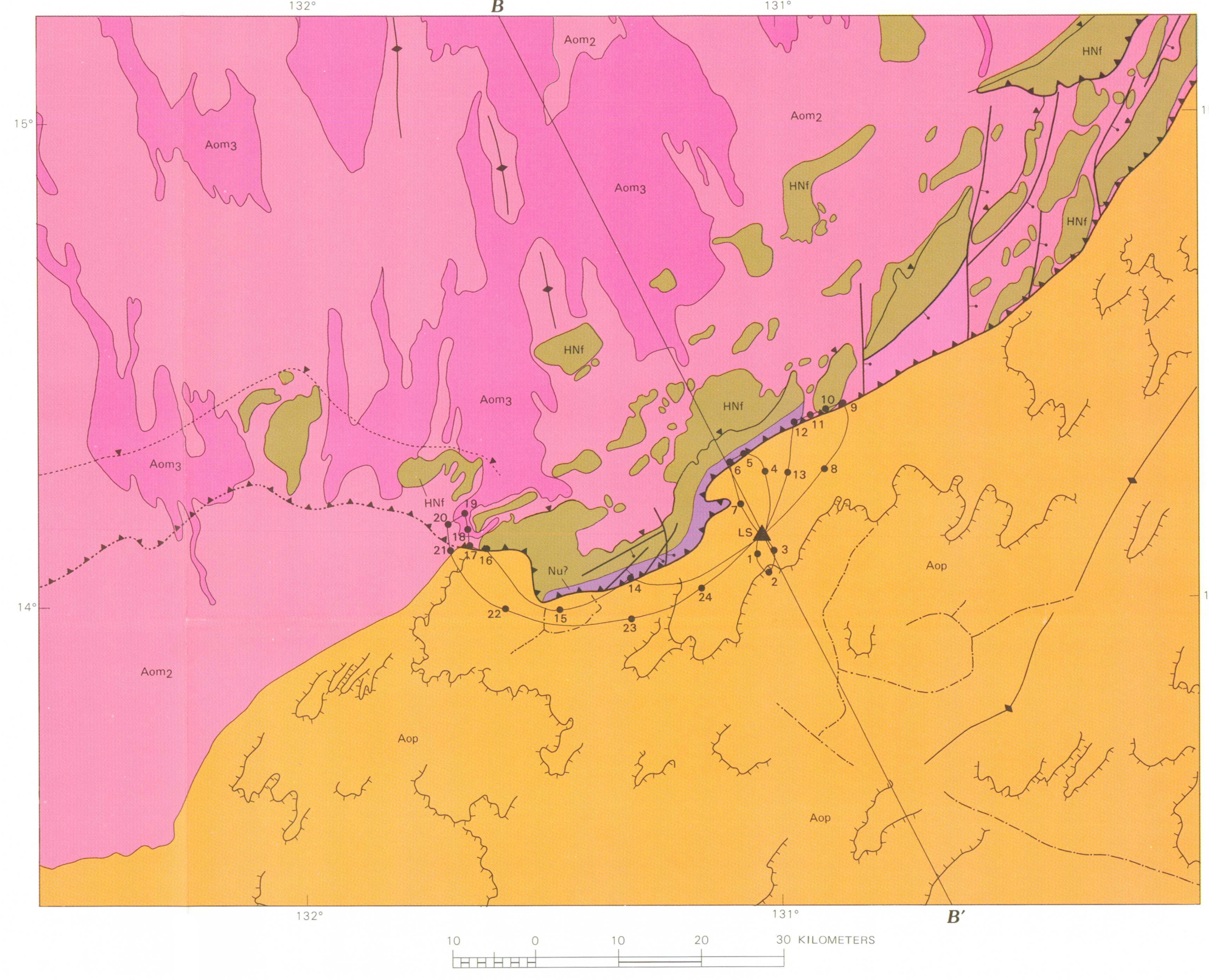


Figure 5. Geologic map and diagrammatic cross section of landing site area. Proposed traverse, landing site (shown with solid triangle), and sample stations for roving vehicle shown on geologic map; rock types of samples to be collected at each station shown in table 1, sheet 2. See sheet 1 for explanation of geologic symbols. Scale 1:500,000.

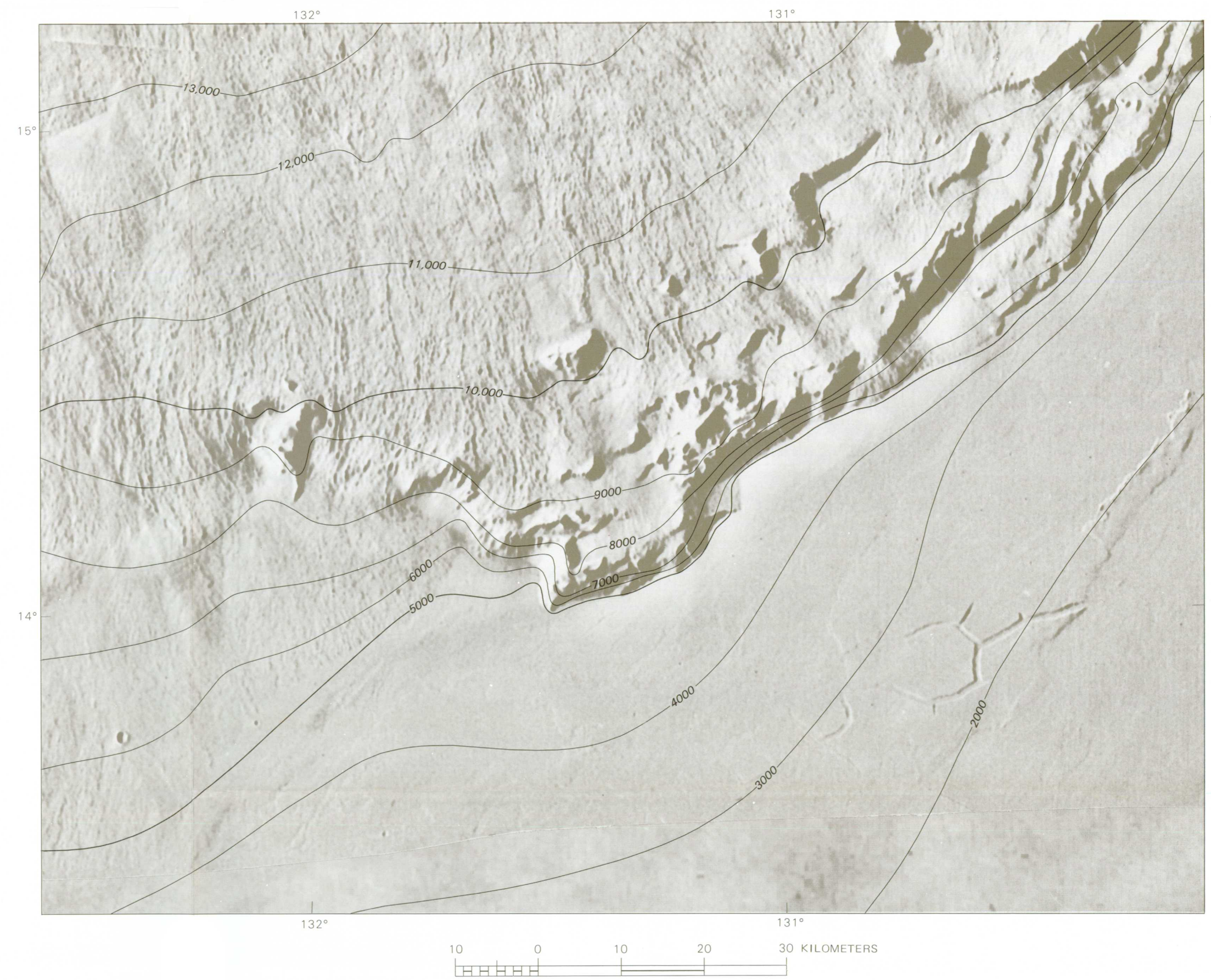


Figure 6. Topographic map of Olympus Rupes landing site area; base is part of newly generated photomosaic (fig. 2, sheet 2). Contours in meters. Scale 1:500,000.

DOCUMENTATION FOR A CANDIDATE LANDING SITE IN THE AREA  
GEOLOGIC MAPS OF SCIENCE STUDY AREA 3, OLYMPUS RUPES, MARS  
(SPECIAL MTM 15132 QUADRANGLE)

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