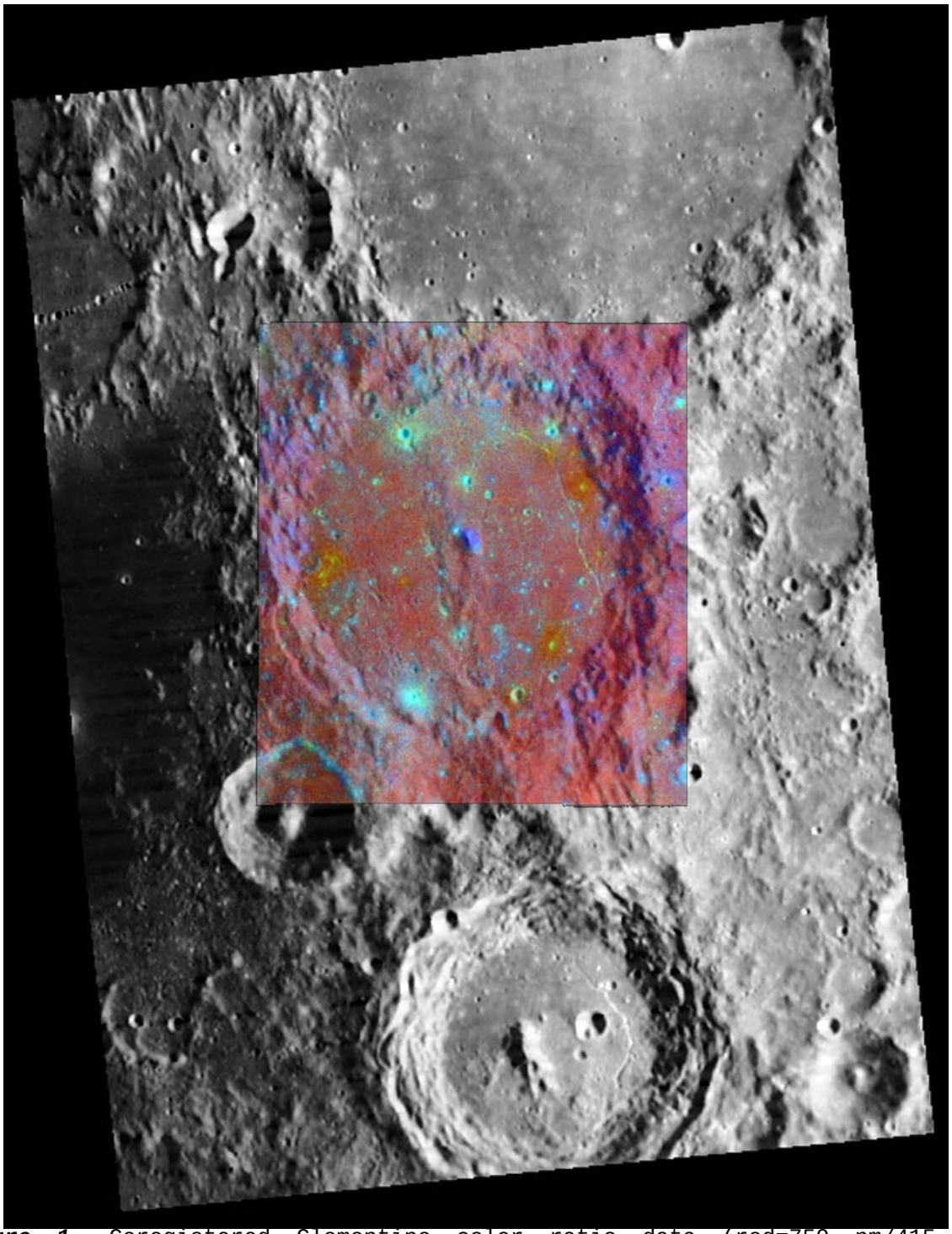


Figure 1. Coregistered Clementine color ratio data (red=750 nm/415 nm; green=750/950; blue=415/750) and digitized LO-IV frame 108-H2 showing Alphonsus crater (108 km diameter; -13.7° S, -3.2° W). Yellow tones in the color image of the crater floor mark the locations of iron-rich materials associated with pyroclastic volcanic deposits. Bright blue tones mark fresh impact craters. North is toward the top in this view.

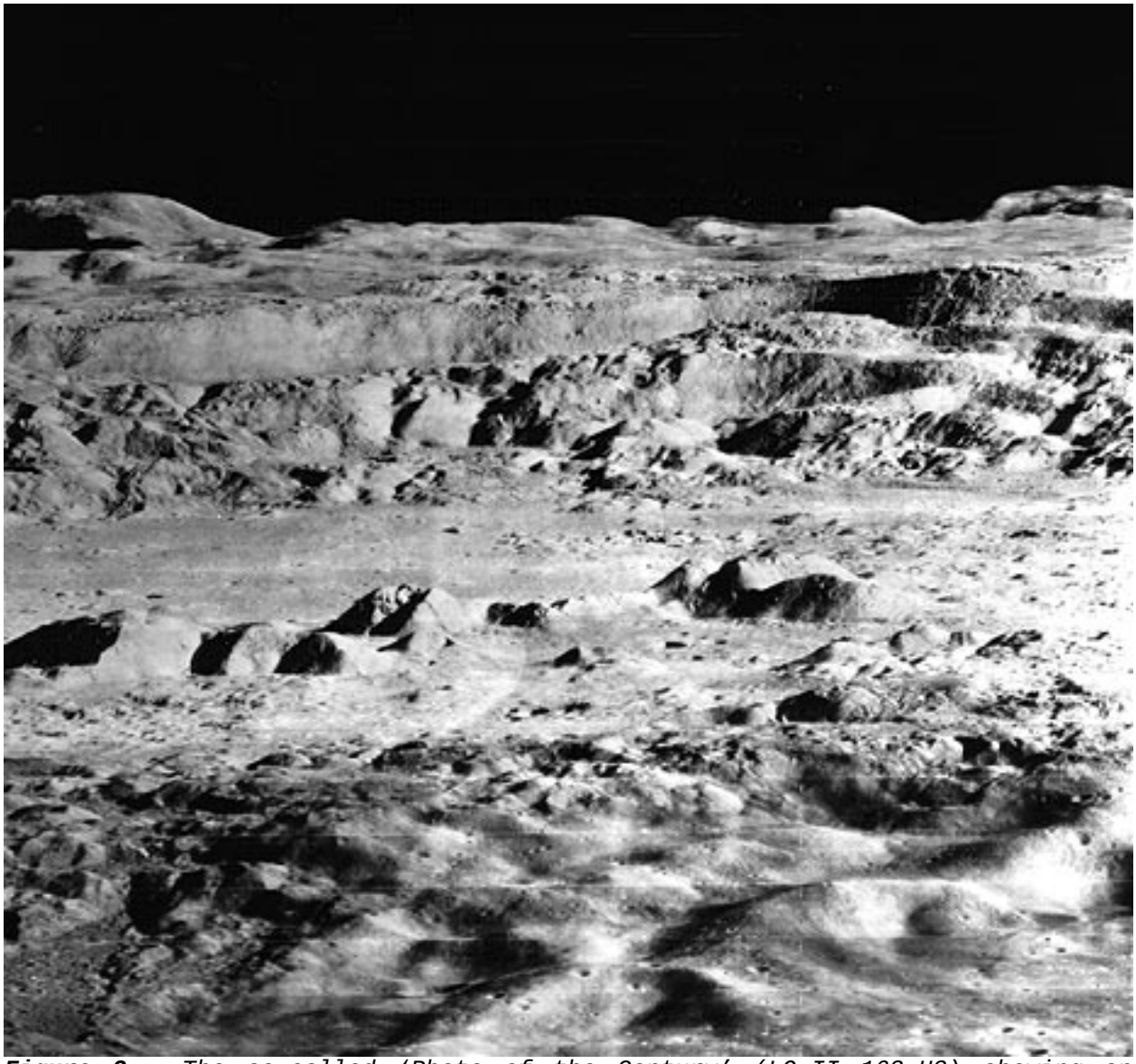


Figure 2. *The so-called 'Photo of the Century' (LO-II 162-H3) showing an oblique view of the interior of Copernicus crater.*

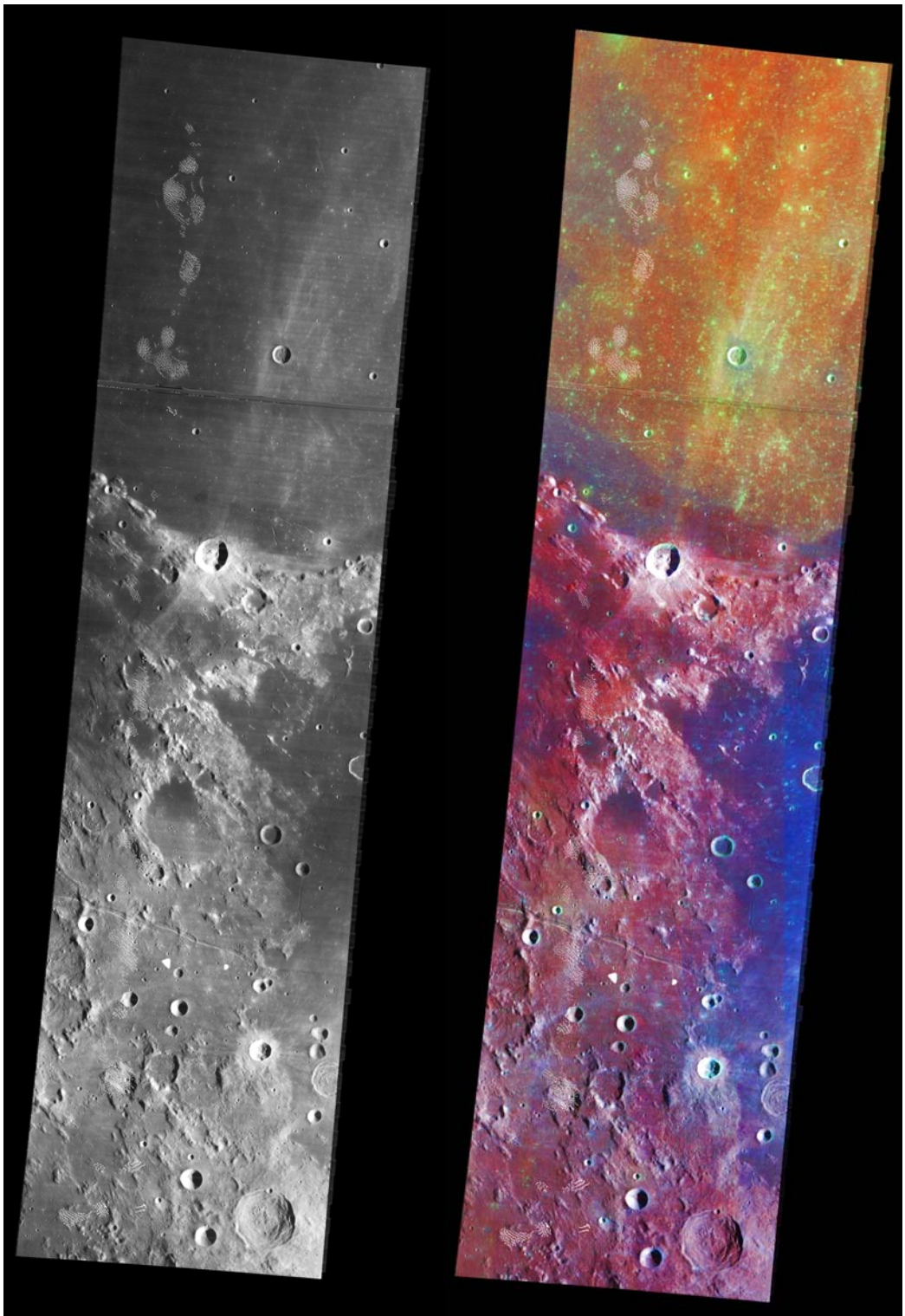
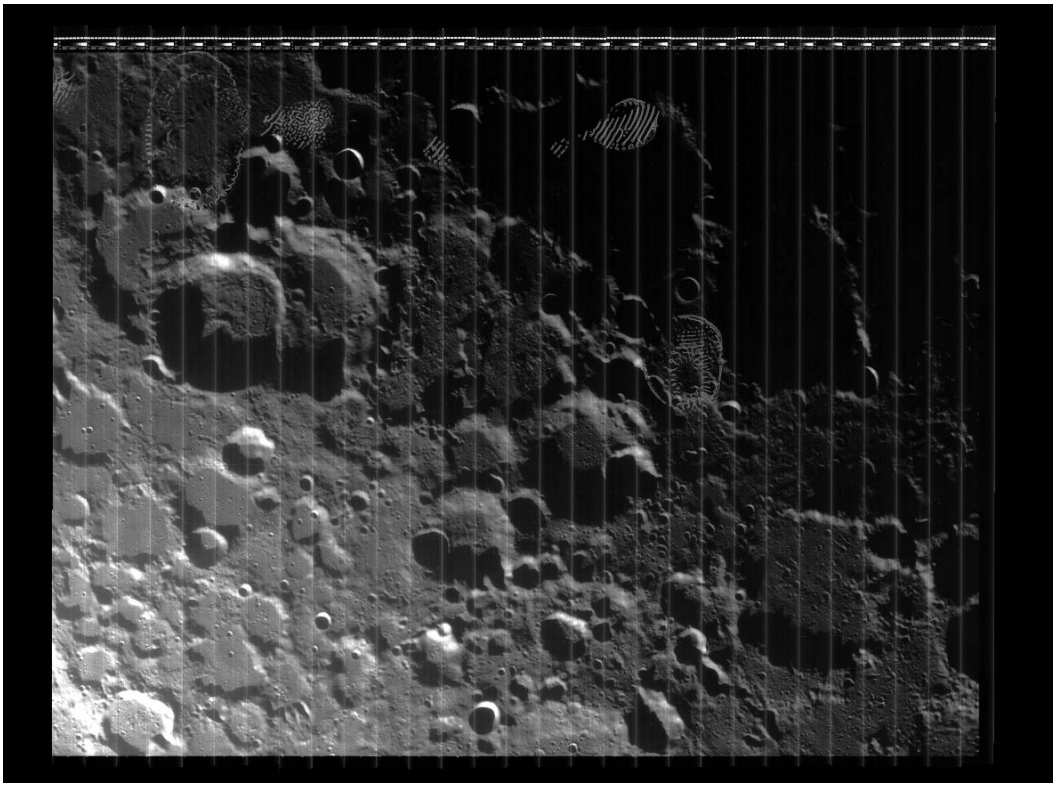


Figure 3. Digital Lunar Orbiter view (left, LO-IV-90H) of southern Mare Serenitatis and western Mare Tranquillitatis (centered at ~3° N, 27° E). (Right) Coregistered LO and Clementine color ratio data (red=750 nm/415 nm; green=750/950; blue=415/750). Each strip of LO data is a single frame comprised of 3 sub-frames. Crater Delambre at lower right is 52 km in diameter.



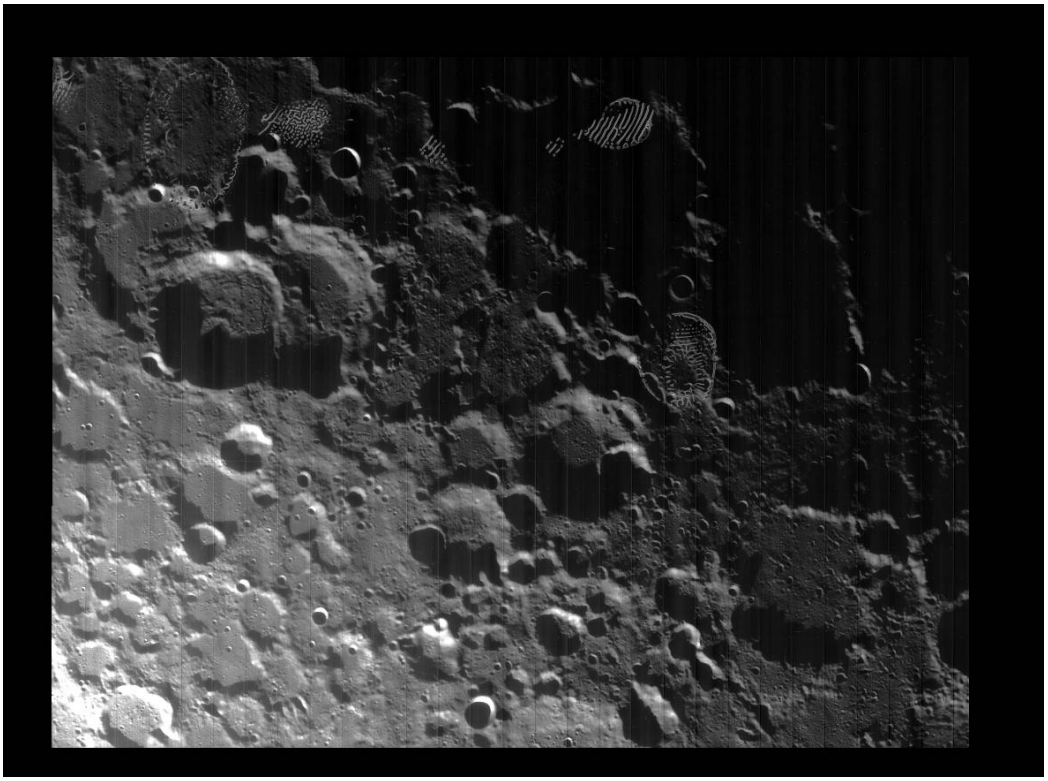


Figure 4. Digitized Lunar Orbiter frame LO-IV-080-H3. (Top) Blotchy ‘water marks’ (an artifact of on-board film processing) and vertical stripes are present. (Bottom) Stripes have been mitigated and water marks remain.

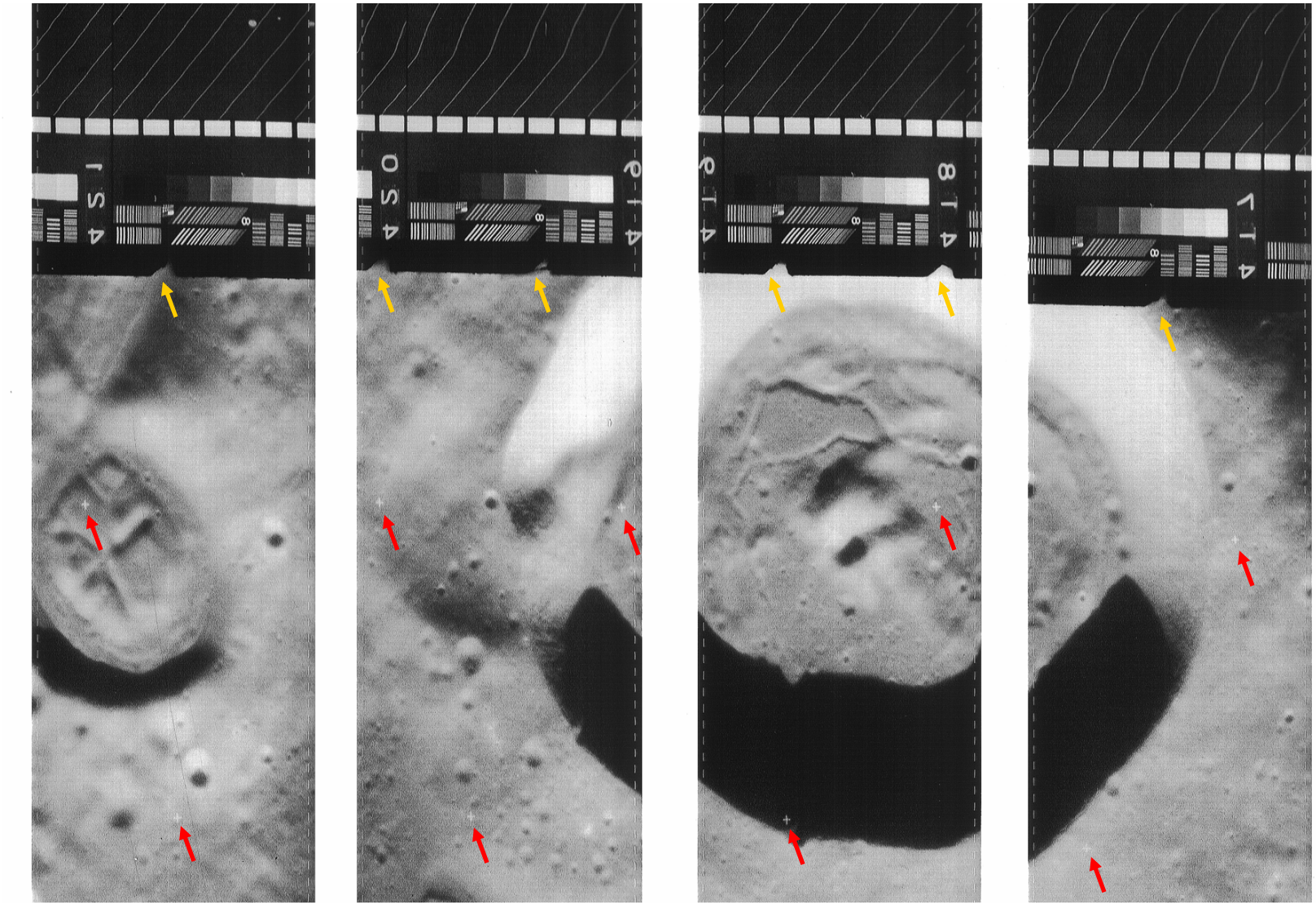


Figure 5. Scanned Lunar Orbiter film strips. Note the pre-exposed film information at top, including frame number, gray-level chart, resolving power lines, and fiducial (triangular features at film edges; yellow arrows) and reseau (tiny white crosses or '+' marks) marks (red arrows).

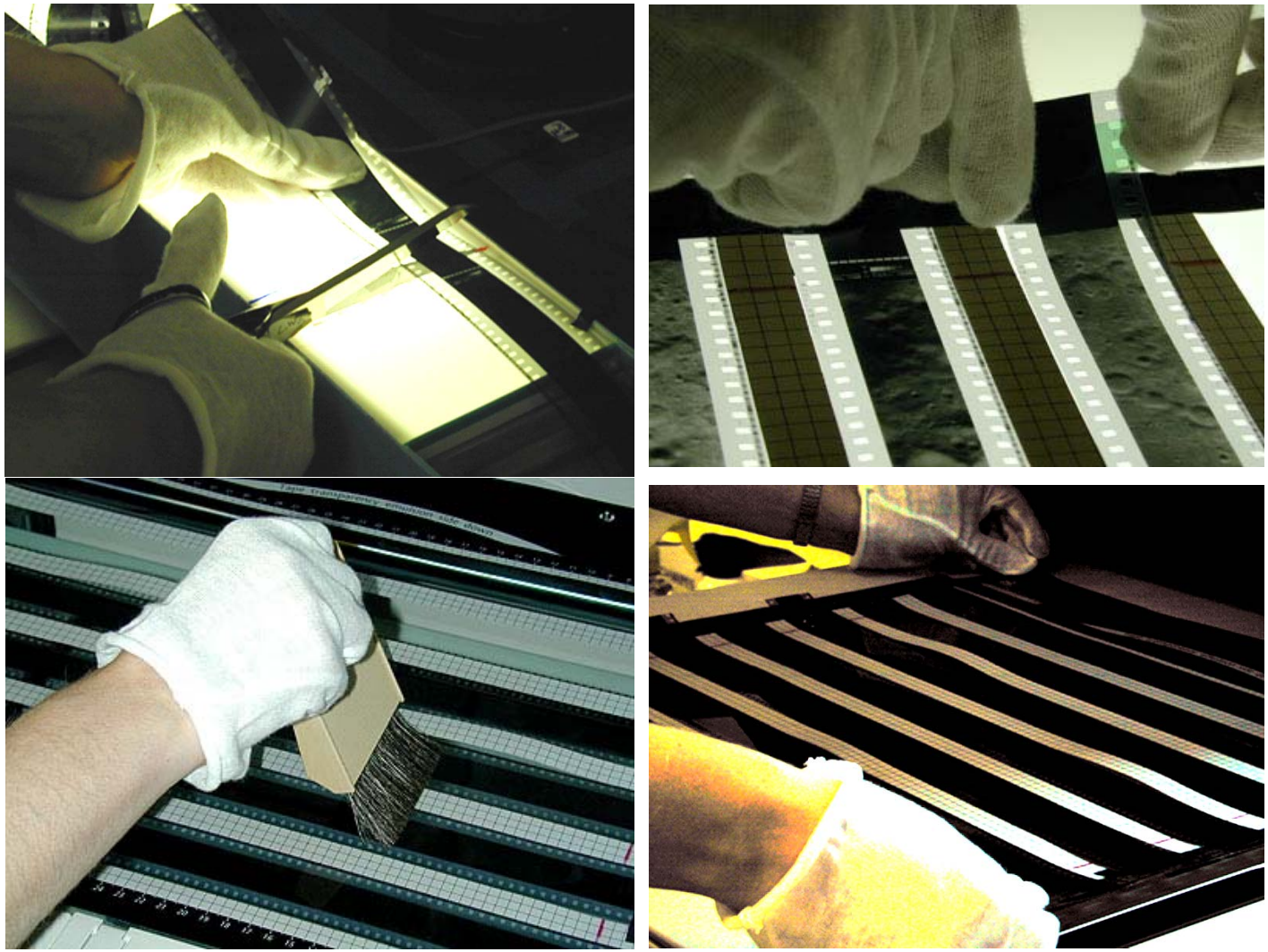


Figure 6. Film handling examples: (Top Left) Film strip is fed off canister reel and cut to a specified length. (Top Right) Four individual film strips are mounted on a scanning template, which has guides for consistent and accurate film placement. (Bottom Left) Anti-static brush is used to remove lint, dust, etc. (Bottom Right) The mounted template is placed on the CreoScitex Eversmart Pro II scanner. Scanning one template with four strips at 25 microns takes about 15 minutes of scan time.

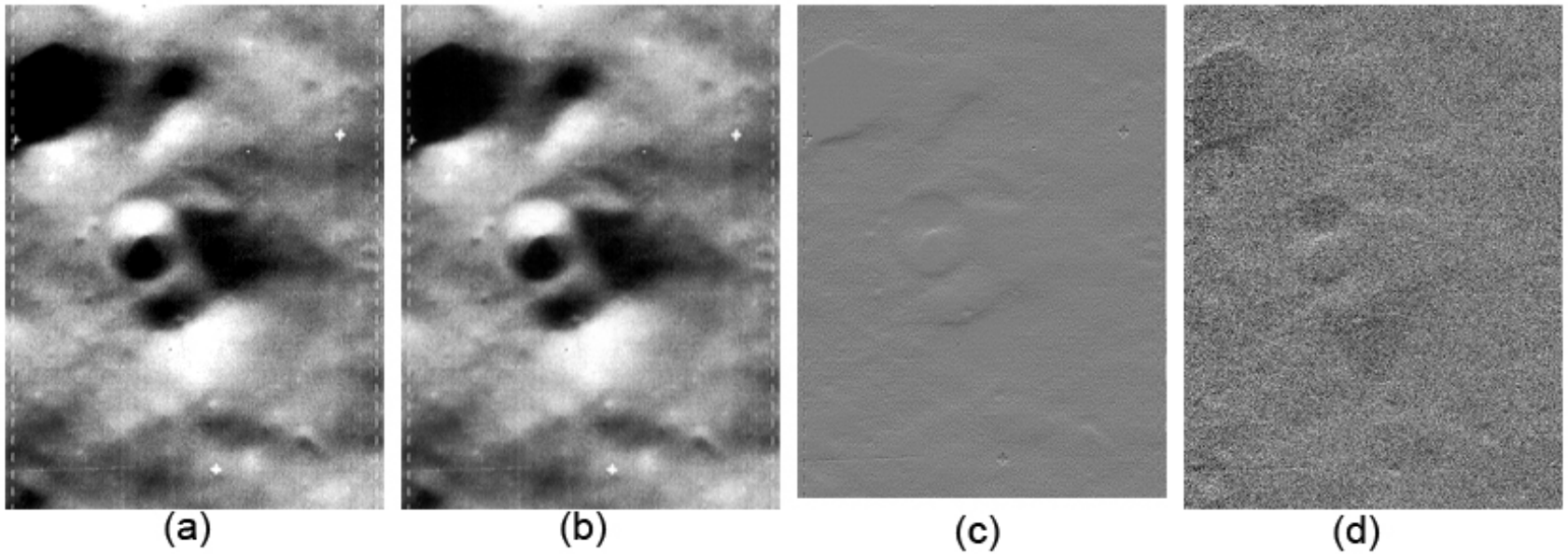


Figure 7. Examples of different scanning resolutions for Lunar Orbiter film scans. (a) 25-micron scan of portion of LO film strip (XX-XXX) showing crater and hills. (b) 50-micron scan of same film strip. (c) "Difference Image" and (d) Absolute value image showing differences between 25- and 50-micron scans. Note that the details of the original image are preserved at 50 microns, and the differences consist mostly of film texture and blemishes. White dashes at film margins are 'syncrhonization lines' and white crosses are reseau marks.

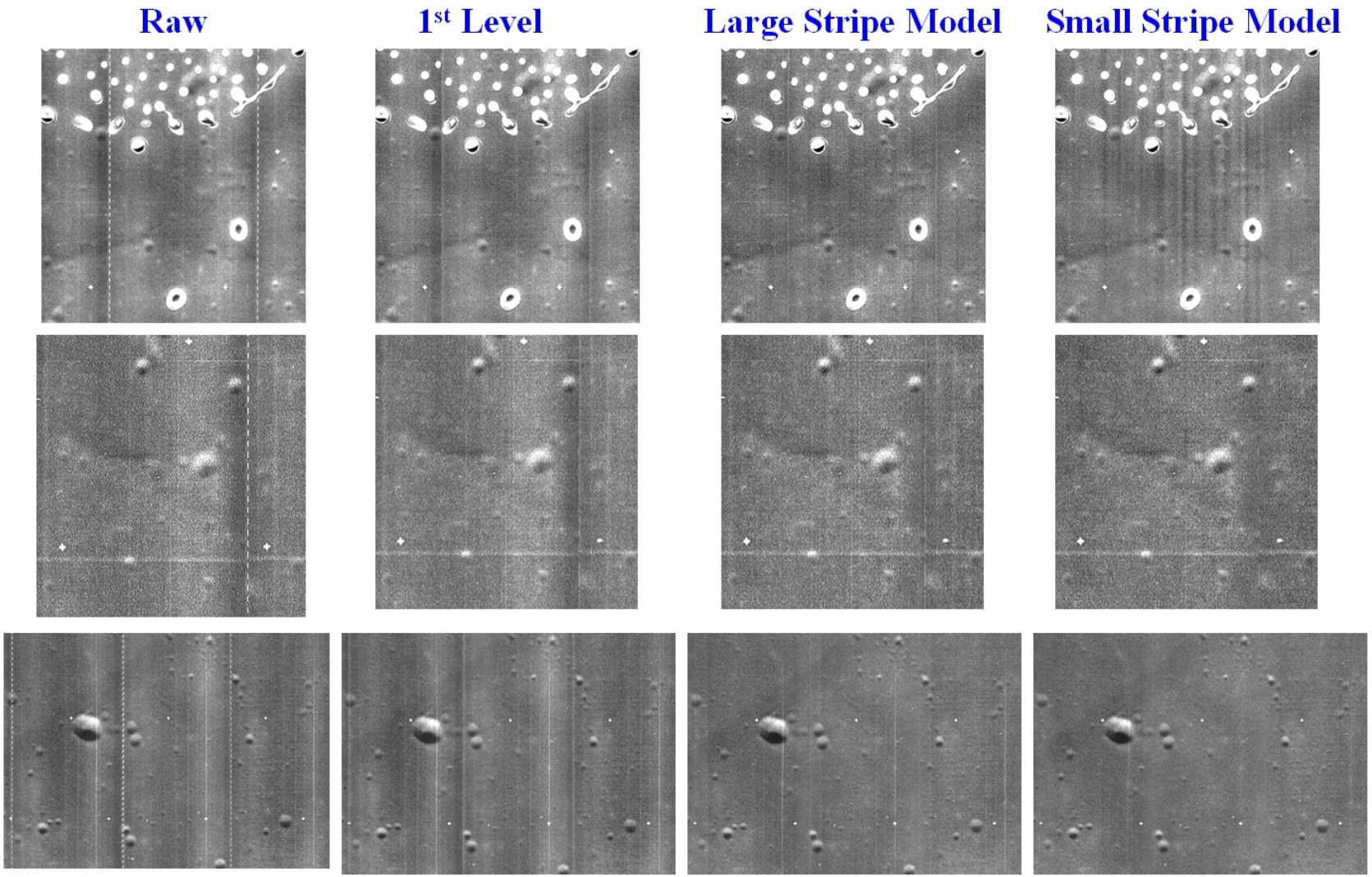


Figure 8. Examples of destriping algorithms applied to scanned Lunar Orbiter film. Portions of LO frames XX-XXX? The spots on the images in the top row are water-mark blemishes.

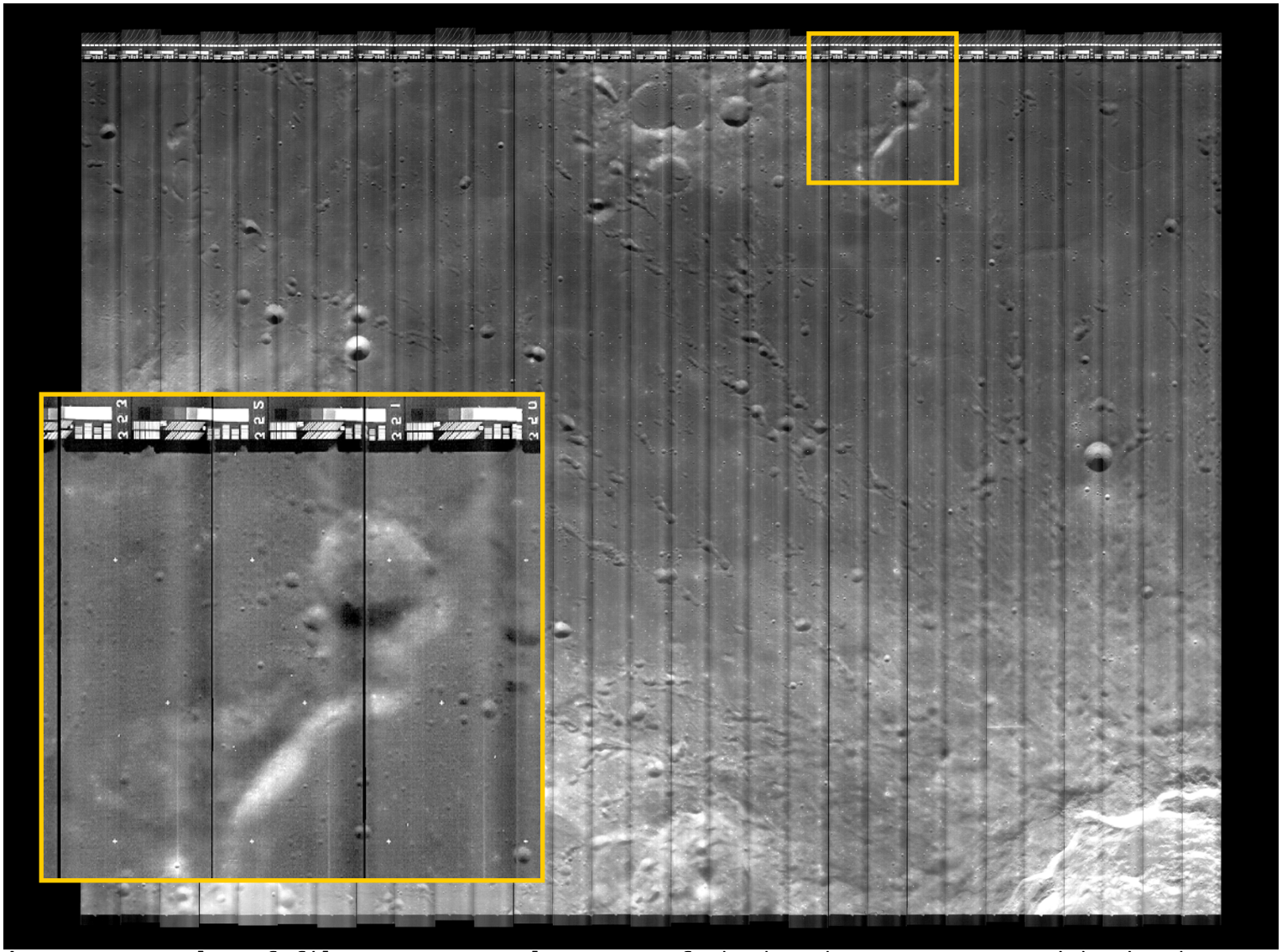


Figure 9. Examples of film gaps. An enlargement of the boxed area at upper right is shown at lower left. LO Frame XX-XXX.

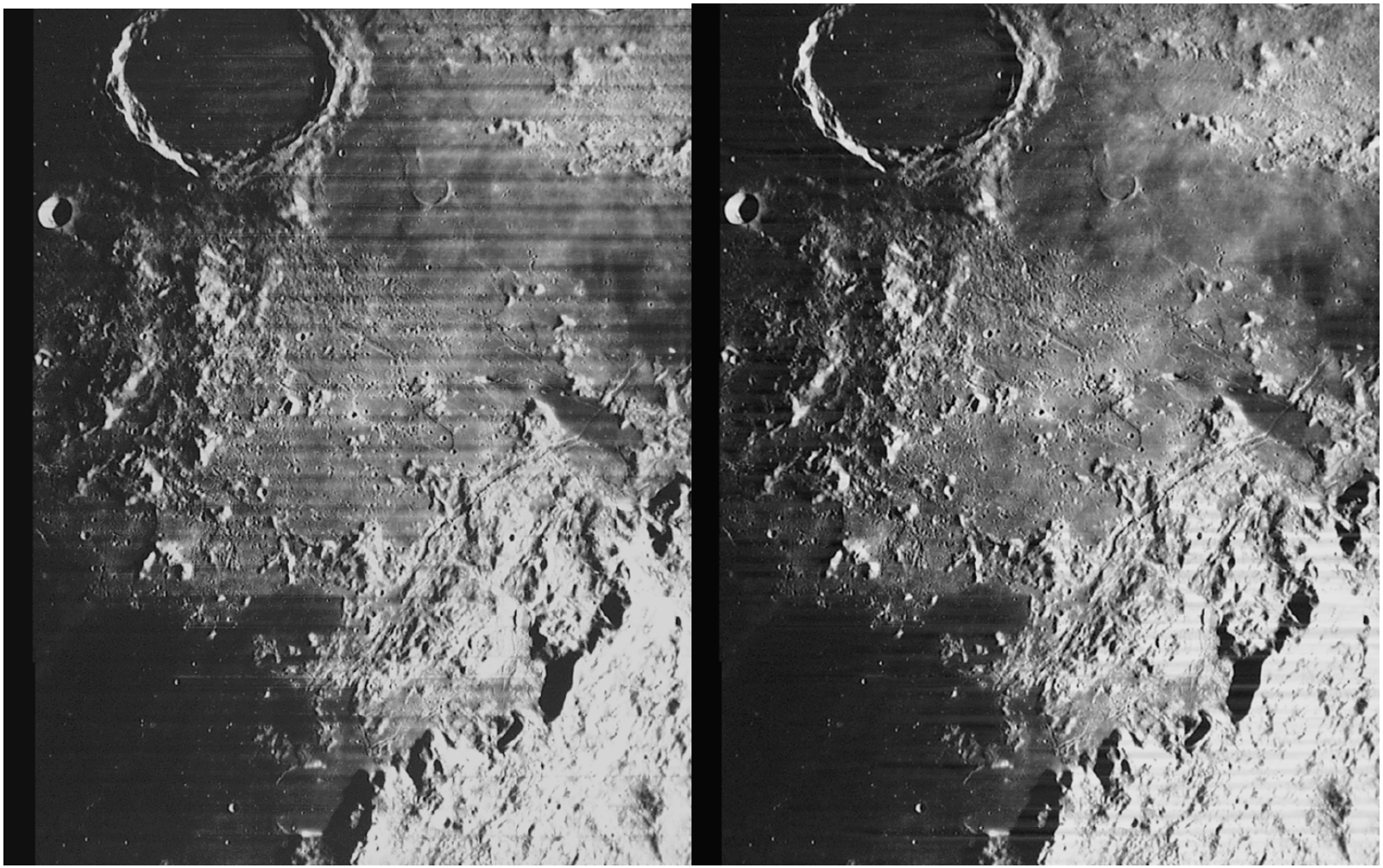
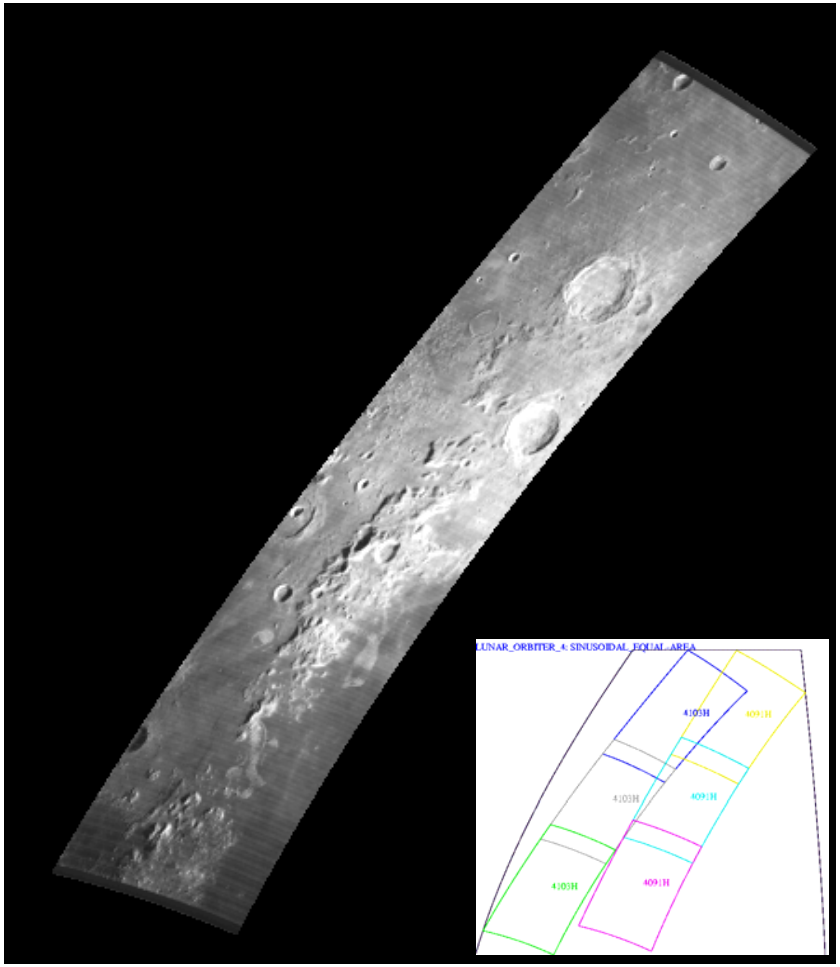


Figure 10. Digital mosaic of LO-IV 109H3. Destriped version of LO-IV 109H3.



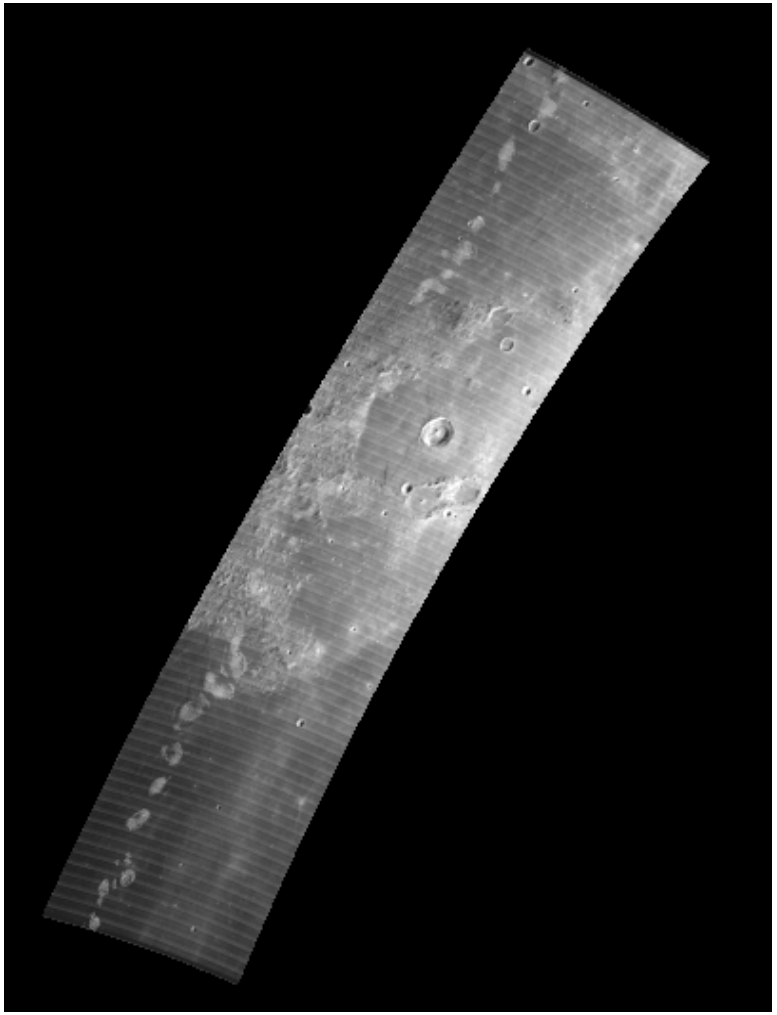


Figure 11. Reprojected LO-IV HR frames 091 (left) and 103 (right; Sinusoidal Equal Area projection). Inset at left is a plot showing footprints of LO-IV HR frames 091 and 103. Note that each high-resolution frame has three sub-frames.

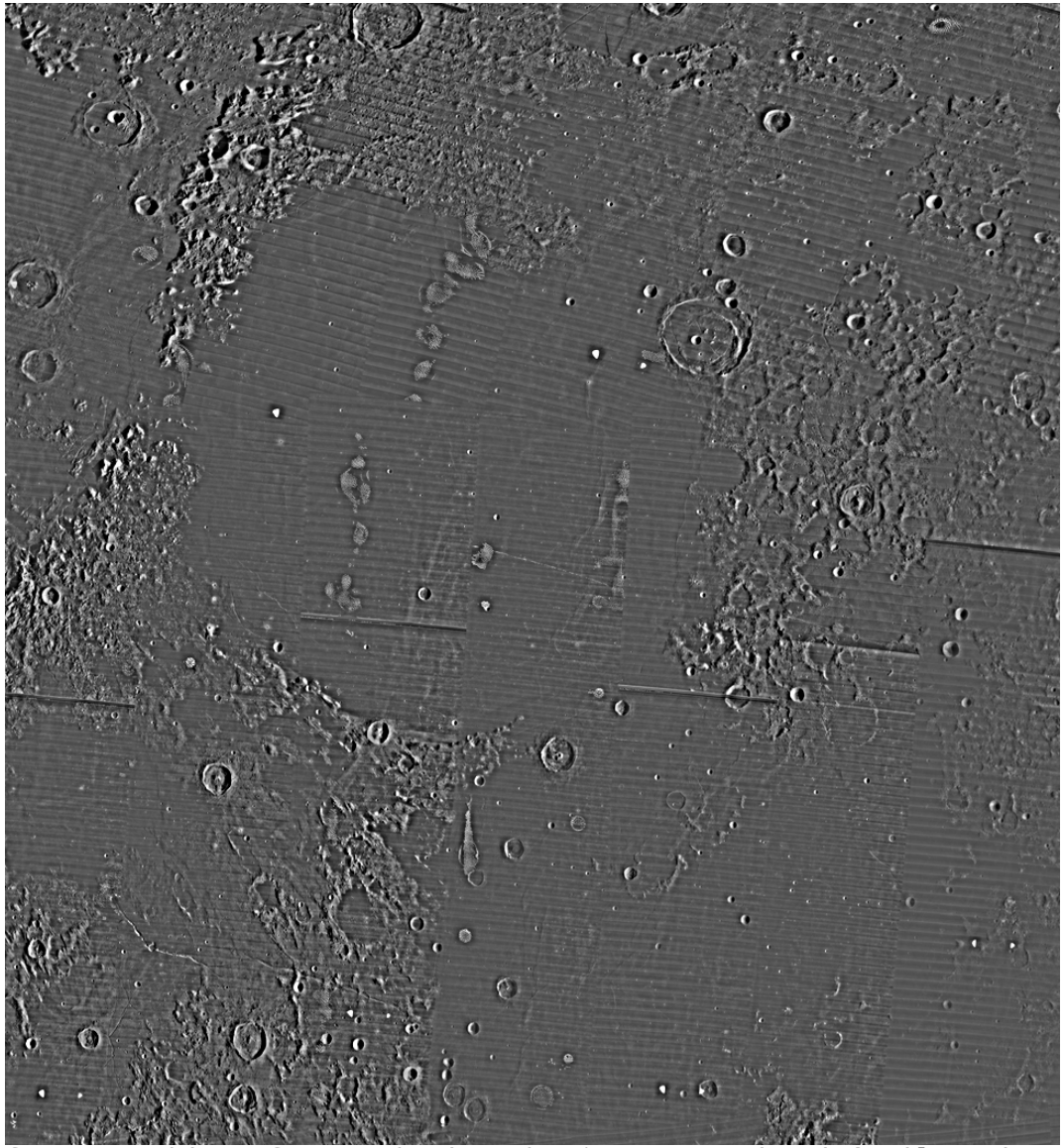


Figure 12. Mosaic of Lunar Orbiter frames showing the 'Mare Serenitatis' tile prior to destriping. Note watermarks and dark/bright stripes at frame boundaries.

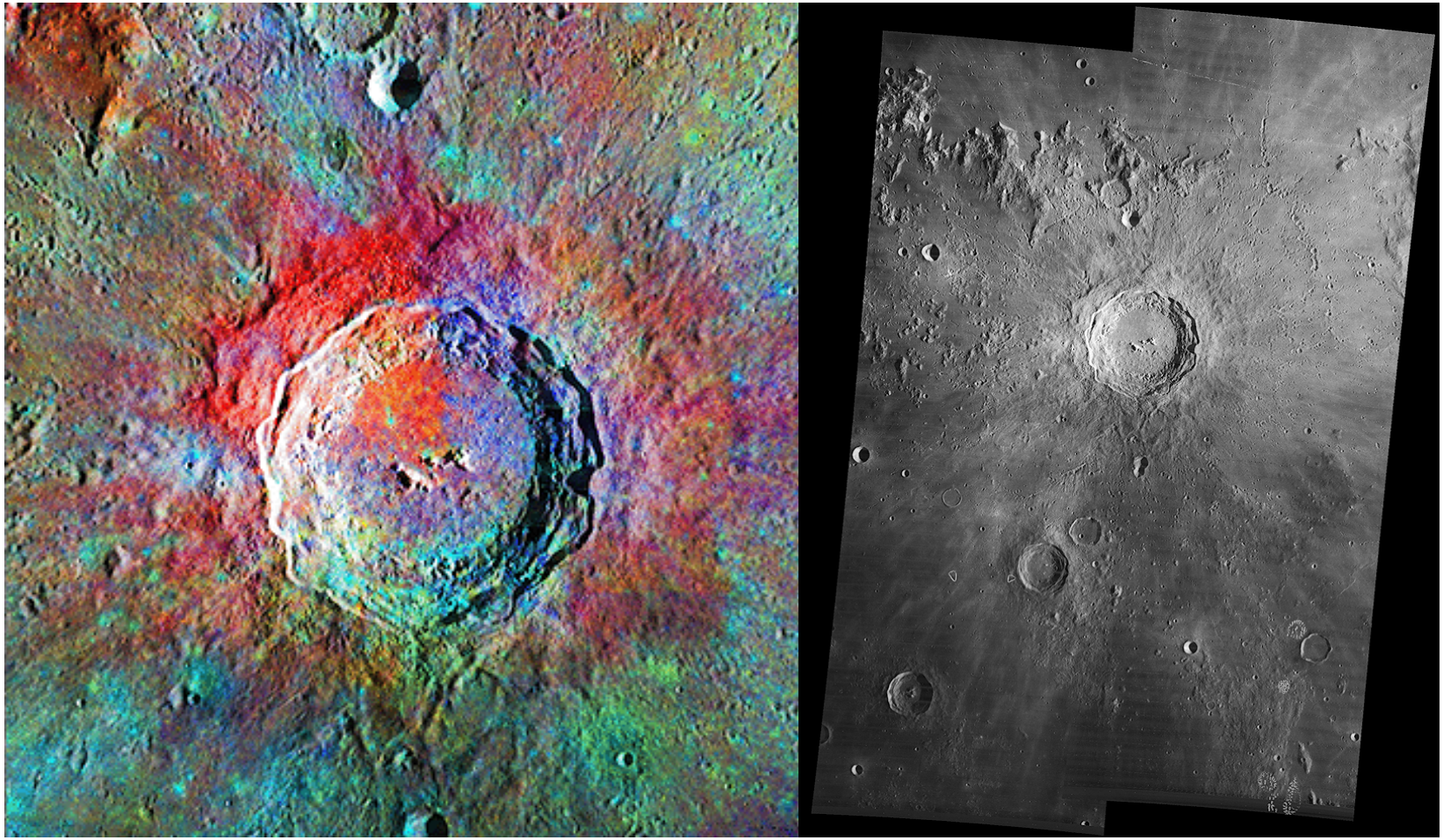


Figure 13. Copernicus crater (93.0 km, 9.7N, 20.1W). (Left) Coregistered and map-projected LO IV (Frames 126H2 & 121H2) and Clementine color ratio data (red=750/415; green=750/950; blue=415/750). (Right) Mosaic of LO-IV Frames 126H1/H2 and 121H1/H2 centered on Copernicus crater and surrounding region.

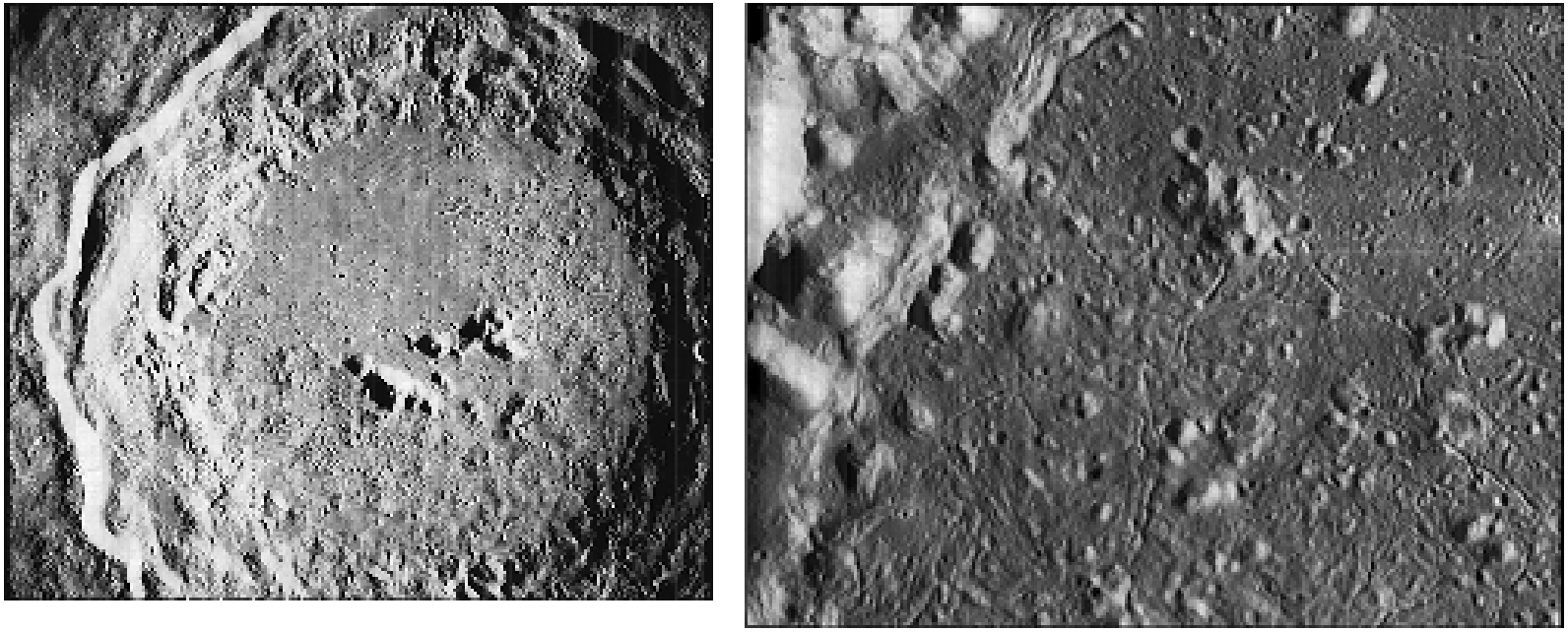


Figure 14. (Left) LO-V Frame 152M showing interior and portion of the rim of Copernicus crater. (Right) LO-V Frame 152H3 showing very high-resolution view of the floor of Copernicus crater. Note drapey texture of impact melts.