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In October 2008 I took a new series of primary electronic photographs of Mercury. This new ground based observation of the planet was continuing observations reported in (Ksanfomality, 2009), using the same facility, technique and short exposures method. The observation spectral band was near-infrared (700 to 1000 nanometers). From an observational perspective the goal was the return to the area of the planet covered only partly by the recent MESSENGER imaging in 2008 October (and not covered by the Mariner-10 imaging in 1974-75). The sector 285-355ºW was investigated, the subterrestrial meridian was 295ºW. The phase angle of Mercury was 65°, the disk of the planet was about 6 arc seconds. Mercury was at morning elongation. The observations reported here were made on October 26, 2008, 04-05 UT. The meteorological condition was not very good but comprehensible. About 800 of initial electronic photos were acquired and processed. Based on the subsequent selection from the electronic primary photos, an image for the longitudes 285º -360º -20ºW was produced. The resolution is not as high as in (Ksanfomality, 2009, Figs. 5-6), due to the observation meteorological conditions.

In this sector two large dark regions are placed northward from the equator, between 0 and 40°N (centered about 295°W). They are more or less round in the shape and are about 1000 km by sizes. The prominent features in other areas are also seen.

The eastern parts of the dark areas are neighboring the west rim of the Basin S (or “Skinakas Basin”). The properties of the S-Basin, one of the largest formations in the longitude range 210°-350°W, were reported in (Ksanfomality and Sprague, 2007) and (Ksanfomality, 2009).

The image of Mercury thus obtained was compared with the electronic photos made from the MESSENGER spacecraft. By their comparison it was shown that features at the western limb of the image are clearly identified with the MESSENGER data placed close to the eastern limb.

As stated in (Ksanfomality, 2009), the whole sector 265-355ºW of longitudes of Mercury is enriched by contrast bright and dark large features in comparison with the sector 210–285ºW, considered in (Ksanfomality and Sprague, 2007). Knowledge of crater and dark areas morphologies enables studies of a number of outstanding issues in planetary geomorphology, including variations in geologic material and a strange asymmetry in surface details distribution on Mercury.

One may conclude that the large dark spots up to 1000 km in diameter and other large structures are distinguished in the stacked image of Mercury, covering longitude sector 280°–360°W. The dark spots are placed just westward of S-Basin, identified with previously found works. It can be asserted with caution that the large relief features are distributed asymmetrically over the surface of Mercury, much as observed on other terrestrial planets and on the Moon.

Interesting news came in 2008, December. Mr. Frank J. Melillo, the ALPO Mercury coordinator, informed me that almost simultaneously with the observations reported above, the very next day, on the 27th October 2006, the same features were seen in ground based observations made by the group of the three independent observers, John Boudreau, Ed Lomeli and Frank J. Melillo. They wrote that they believed it was quite an achievement of what they could do with smaller telescopes.

Ksanfomality, L.V. 2009. The surface of Mercury in the 210–350°W longitude range. Icarus 200, 367-373.

Ksanfomality, L.V., Sprague, A.L., 2007. New images of Mercury’s surface from 210° to 290°W longitudes with implications for Mercury’s global asymmetry. Icarus 188, 271–287.