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On the Microwave Signal at the Second Lagrange Point. PIERRE-MARIE ROBITAILLE, The Ohio State University, LARISSA BORISSOVA, DMITRI RABOUNSKI, Moscow, Russia — It has been proposed that the 2.7 K Penzias-Wilson monopole is of oceanic origin. Under this scenario, the signal should be powerful near the Earth and rapidly fall in power away from our planet. As a result, the Penzias and Wilson signal is not expected to have any significant intensity at the second Lagrange point. In July 2008, the ESA will launch the PLANCK mission to this location. The low Frequency Instrument (LFI) on PLANCK is operating as a group of pseudo-correlation receivers. Since the 2.7 K signal will not be found at L2, an analytical analysis of the PLANCK LFI reveals that the knee frequency of the radiometers will rise to ~ 50 mHz, well above the 3-7 mHz levels expected by the PLANCK team and substantially above the satellite spin frequency of ~ 17 mHz. This will result in the production of significant stripes in the raw maps generated, potentially impacting the harvest from PLANCK. Calculations reveal that little difference exists in the intensity of the 2.7 K field, either at the position of a U2 plane (25 km), or in the COBE orbit (900 km). However, the density of the energy of the field drops to $\sim 10^{-7}$ of these near Earth values at the L2 point, rendering detection improbable. Since the LFI on PLANCK can operate either in absolute or difference mode and since the HFI operate as bolometers, PLANCK should unequivocally ascertain the origin of the 2.7K monopole.

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