
Search for ultraviolet luminescence of soil particles at the Phoenix landing site, Mars.

Autorzy

W. Goetz
M. H. Hecht
S. F. Hviid
M. B. Madsen
W. T. Pike
U. Staufer
M. A. Velbel
N. Harrit
Eugeniusz Zych
K. S. Edgett

Rok wydania

2012

Czasopismo

Planetary and Space Science

Numer woluminu

70

Strony

134-147

DOI

10.1016/j.pss.2012.05.002

Kolekcja

Naukowa

Język

Angielski

Streszczenie

The Optical Microscope (OM) on the Phoenix Mars lander (operated from May through October 2008) was used to search for visible-wavelength luminescence of soil particles excited by ultraviolet (UV) illumination ($\lambda=360\text{--}390\text{ nm}$). No luminescent particles were found, with the possible exception of a few potentially luminescent features comprising about 0.02% of the total soil volume. The luminescence quantum efficiency of bulk soil as well as individual soil particles at the Phoenix site is constrained to less than 0.04%. A similar UV experiment will be performed by the Mars Hand Lens Imager (MAHLI) on the upcoming Mars Science Laboratory (MSL) mission. We compare OM and MAHLI UV experiments to each other and suggest a strategy to search for UV-excited luminescence with MAHLI.

Słowa kluczowe

Mars, Soil particles, UV-excited luminescence, Phoenix, Optical microscope (OM), Mars hand lens imager (MAHLI)

Adres publiczny

<https://doi.org/10.1016/j.pss.2012.05.002>

Artykuł

Plik został wygenerowany dnia 2026-10-06 20:03:38

Adres w repozytorium <https://old.chem.uni.wroc.pl/pl/repozytorium/PhmTHDb>.