Pf-013

Room: C310

Reflected electrons from the moon observed by PSA/ESA onboard the NOZOMI spacecraft

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We could successfully conduct electron observations around the moon with PSA/ESA onboard NOZOMI spacecraft during its second lunar swing-by. We found anti-flowing electrons toward the sun in addition to the nominal solar wind electrons near the interval of the closest approach. Since these electrons are assumed to be reflected solar wind electrons due to the mirror force near the surface of the moon, we can deduce magnetic field property of lunar surface by investigating characters of these electrons. We will report the details of the observed velocity distribution functions and discuss on generation mechanism of the anti-flowing electrons together with the structure of the magnetic field around the moon.