

Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

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PPS024-12

Room:103

Time:May 23 09:15-09:30

Combining the LP and SP Apollo Seismic Data to Explore "Broad" Band Seismology on the Moon

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Seismic data from Apollo missions is still one of the most important data set to investigate the structure and the state inside the Moon. On the other hand the data set suffer from constraints such as the number of seismic stations and their network location, and the sensitivity of the instruments. Our understanding of spectral feature of the lunar seismic events is limited to narrow frequency range because of the limitation of the instrument. Apollo missions had short period(SP) and long period(LP) seismometer and each seismometer covered about 1-10 Hz and 0.1-1 Hz respectively. In most of the previous studies, these data were treated independently and spectral features are discussed in limited band width. In this study we try to identify the spectral features from both LP and SP seismometer. From the two observations, we estimate the continuous spectrum that cover both of the LP and SP frequency range. By studying the spectral feature with broader frequency range, we can identify their characteristics more in detail compared to using just one observation.

Keywords: Moon, Earthquake, Moonquake