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マウンダー極小期の宇宙線強度変動
Variation of the intensity of galactic cosmic rays during the Maunder Minimum

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Variations of the galactic cosmic-ray flux during the Maunder Minimum (AD1645-1715) are examined based on carbon-14 in tree rings and beryllium-10 in ice cores. Variations of beryllium-10 content in ice cores have suggested that the flux of galactic cosmic rays have increased by ˜40 percent for about one year around every other solar cycle minima, when solar dipole magnetic field was negative. Periodicity of the events is ˜26-28 years, corresponding to the Hale cycle during the Maunder Minimum. These extreme enhancements of cosmic rays are suggested to be possibly caused by a change in the large scale structure of heliospheric magnetic field, associated with extremely weakened solar activity. To obtain more reliable ages for those events, we have been also measuring the carbon-14 content in tree rings dated by dendro-chronology.

キーワード: マウンダー極小期, 宇宙線, 太陽活動, 太陽圏, 宇宙気候, 宇宙線生成核種
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