

AEM012-03

会場: 202

時間: 5月28日09:30-09:45

2.4m地上望遠鏡を用いた金星雷放電発光の検出

An Attempt to Detect Lightning at Venus Using a Ground-Based 2.4 m Telescope

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A new attempt was made to detect lightning flashes on the dark side of Venus from the earth using the 2.4 m aperture telescope at the Magdalena Ridge Observatory in New Mexico, USA. ? The technique employed a combination of high speed (~100 fps) imaging and narrow band interference filtering of OI 777.4±0.7 nm emissions, which both froze the atmospheric seeing and eliminated the need to mask the bright crescent of Venus to prevent camera saturation. ?On the morning of 20 May 2009, when Venus presented a crescent of phase of ~40 percent of the disk, 13 separate observing runs of 10,000 frames per run were conducted, comprising a total of ~20 min of data time, extending from predawn twilight into full sunlight. ?A preliminary analysis of the full set of images failed to detect any statistically significant set of flashes that could readily be interpreted as lightning. This talk will review the physics and general rationale behind the approach, what improvements could be made in future observations, and the preliminary results of the study.

キーワード:金星,雷放電

Keywords: Venus, Lightning