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Visible and near infrared spectroscopy of Hayabusa re-entry using semi-autonomous tracking (Conference Paper)McIntyre, T.J.^{ac}, Khan, R.^{ad}, Eichmann, T.N.^{ac}, Upcroft, B.^{ad}, Buttsworth, D.^b ^a University of Queensland, Brisbane, QLD 4072, Australia^b University of Southern Queensland, Faculty of Engineering and Surveying, Toowoomba, QLD 4350, Australia^c School of Mathematics and Physics, United States[View additional affiliations](#)

Abstract

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A ground-based tracking camera and co-aligned slit-less spectrograph were used to measure the spectral signature of visible radiation emitted from the Hayabusa capsule as it entered into the Earth's atmosphere in June 2010. Good quality spectra were obtained that showed the presence of radiation from the heat shield of the vehicle and the shock-heated air in front of the vehicle. An analysis of the black body nature of the radiation concluded that the peak average temperature of the surface was about (3100±100) K. © 2012 by the American Institute of Aeronautics and Astronautics, Inc.

Indexed keywords

Black body; Ground-based tracking; Heat shields; Spectral signature; Visible and near-infrared spectroscopy

Engineering controlled terms: Exhibitions; Near infrared spectroscopy**Engineering main heading:** Aerospace engineering**Source Type:** Conference Proceeding **Original language:** English**Document Type:** Conference Paper

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Buttsworth, D. , Morgan, R. , Jenniskens, P.
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