



Publication Year	2021
Acceptance in OA @INAF	2023-09-21T14:05:35Z
Title	Ganymede as Observed by JIRAM During the Juno Flyby of 7 June 2021
Authors	TOSI, Federico; MURA, Alessandro; FILACCHIONE, GIANRICO; CIARNIELLO, Mauro; ZAMBON, Francesca; et al.
Handle	http://hdl.handle.net/20.500.12386/34395
Journal	BULLETIN OF THE AMERICAN ASTRONOMICAL SOCIETY
Number	53

Bulletin of the AAS • Vol. 53, Issue 7 (DPS53 Abstracts)

Ganymede as Observed by JIRAM During the Juno Flyby of 7 June 2021

**Federico Tosi¹, Alessandro Mura¹, Gianrico Filacchione¹,
Mauro Ciarniello¹, Francesca Zambon¹, Alberto Adriani¹,
Christina Plainaki², Giuseppe Sindoni², Roberto Sordini¹,
Raffaella Noschese¹, Scott Bolton³, Shawn Brooks⁴, Candice Hansen⁵**

¹INAF-IAPS, ²ASI, ³Southwest Research Institute, ⁴Jet Propulsion Laboratory,

⁵Planetary Science Institute

Published on: Oct 03, 2021

License: [Creative Commons Attribution 4.0 International License \(CC-BY 4.0\)](https://creativecommons.org/licenses/by/4.0/)

Since Juno's orbit insertion at Jupiter until today, the JIRAM spectro-imager observed Ganymede over 5000 times, both with its infrared imaging subsystem and with its slit spectrometer sensitive to the 2-5 μm spectral range. This dataset makes Ganymede the most observed Galilean satellite by Juno. Towards the end of 2019, during perijove 24, JIRAM achieved a maximum spatial resolution of 23 km/px. But during the latest flyby, which occurred on June 7, 2021, during perijove 34, JIRAM observed Ganymede from a much shorter distance, namely between 1053 and 2558 km from the surface, yielding unprecedented pixel resolution values between 0.25 and 0.61 km/px (average value 0.36 km/px), which is 92 times better than the previous flyby and 3 to 7 times better than the most resolved hyperspectral image ever acquired in the past by the Galileo/NIMS instrument at Ganymede. Here we discuss the infrared images and spectra that JIRAM was able to acquire during this flyby, with an emphasis on the preliminary spectroscopic results and the distribution of the chemical species detectable in the spectra. These results are important also in preparation for future measurements to be returned by the ESA JUICE mission, which aims to achieve near-global coverage of Ganymede in the 2030s.

Acknowledgements: JIRAM is funded by the Italian Space Agency (ASI), ASI-INAF contract 2016-23-H.0. The JIRAM instrument was built by Selex ES, under the leadership of the Italian National Institute for Astrophysics, Institute for Space Astrophysics and Planetology (INAF-IAPS), Rome, Italy. JIRAM is operated by INAF-IAPS, Rome, Italy. Support of the Juno Science and Operations Teams is gratefully acknowledged.