

Supporting Information for “Wave activity in Jupiter’s North Equatorial Belt from near-infrared reflectivity observations”

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Contents of this file

1. Text S1: Reduction of COMICS data
2. Figure S1: Comparison of NIRI and COMICS data
3. Figure S2: HST visible light image

Text S1: Reduction of COMICS data

The COMICS instrument (Cooled Mid-Infrared Camera and Spectrograph, *Kataza et al.*, 2000) at the Subaru telescope provides imaging and spectroscopic capabilities in the

7.5-25 μm range. On May 17 2017 and May 19 2017, images of Jupiter were obtained using the 17.65 μm filter; this filter is sensitive to the ~ 150 mbar temperatures in Jupiter upper troposphere (*Fletcher et al.*, 2017) and the dates coincide with near-infrared observations made with NIRI.

The images were reduced by performing A-B subtraction and flat-fielding, making use of a bad-pixel mask to account for corrupted pixels. As with the NIRI images, the COMICS images were geometrically calibrated by visually fitting the planet's limb, in order to assign latitudes, longitudes and viewing angle geometries. As we are only interested here in the relative brightness, no attempt was made to radiometrically calibrate the images.

The reduced and cylindrically projected images are shown in Figure S1, along with the 2.17- μm NIRI image from May 17 2017.

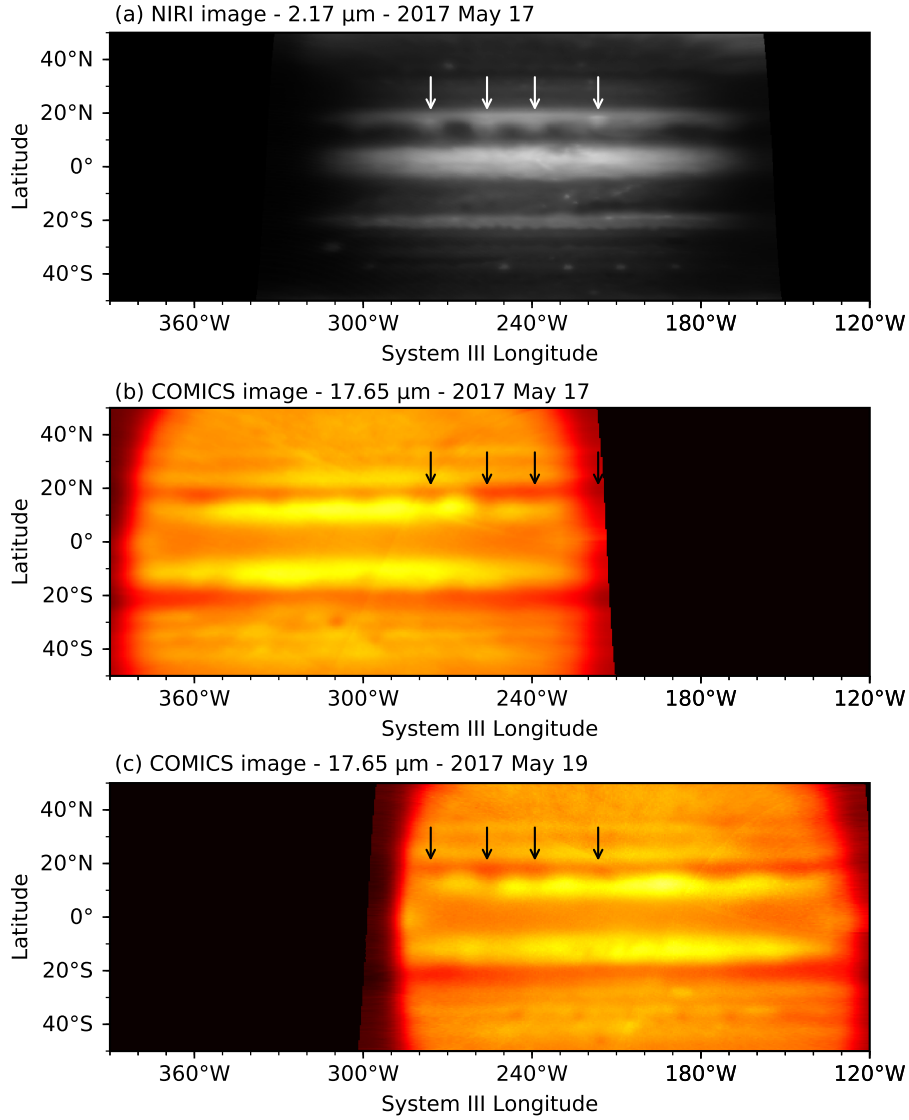


Figure S1. Comparison of NIRI and COMICS data. (a) 2.17-μm NIRI image of Jupiter from May 17 2017. No radiometric calibration has been applied. White arrows highlight the wave crests (as shown in Figure 2 in the main text). (b)-(c) 17.65-μm COMICS images of Jupiter from May 17 2017 and May 19 2017. No radiometric calibration has been applied. The color scaling is arbitrary. Black arrows are located at the same longitudes as the white arrows in (a). There is a correlation between the bright crests in the near-infrared image and dark, cooler regions in the thermal infrared images.

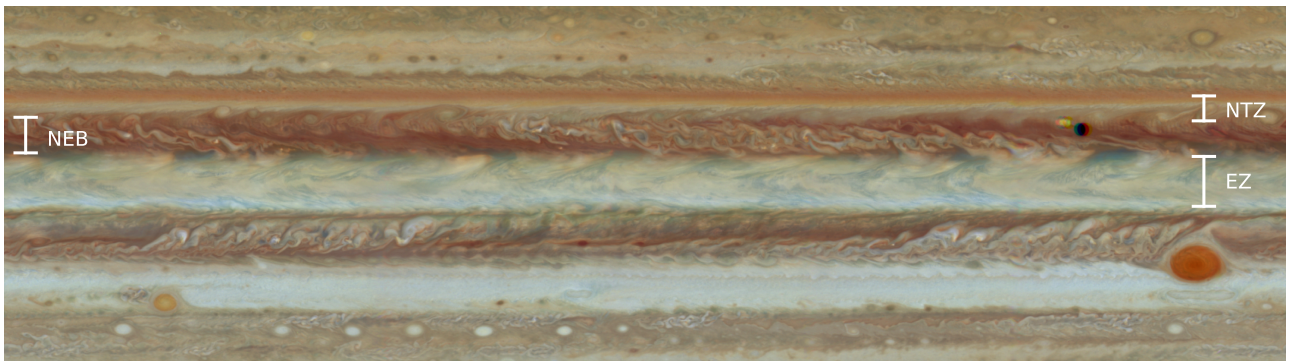


Figure S2. A example visible-wavelength map of Jupiter for comparison with the near-infrared. The images used to create the map were obtained with the Hubble Space Telescope on April 3 2017, as part of the OPAL program (PI: Simon, GO13937). This is a cylindrical projection in System III longitude and planetographic latitude, extending from 50°S to 50°N. This figure was obtained from <http://dx.doi.org/10.17909/T9G593>.