

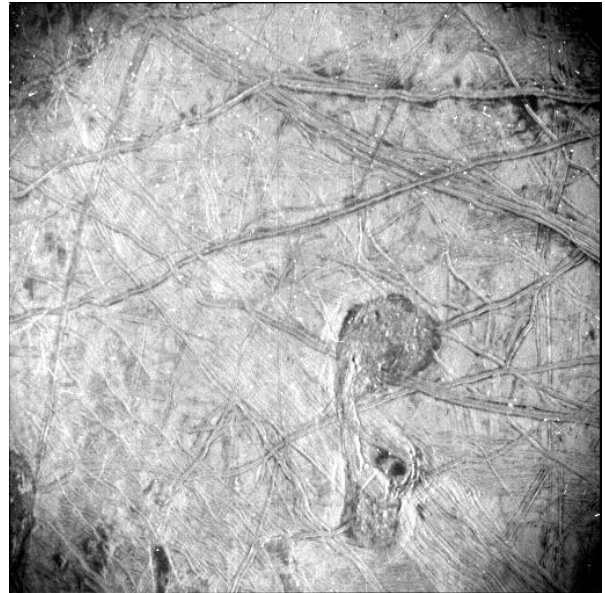
**COMPLEX FEATURES ON EUROPA'S SURFACE REVEALED BY JUNO'S STELLAR REFERENCE UNIT.** Heidi N. Becker<sup>1</sup>, Meghan M. Florence<sup>1</sup>, Jonathan I. Lunine<sup>2</sup>, Paul M. Schenk<sup>3</sup>, Candice J. Hansen<sup>4</sup>, Martin J. Brennan<sup>1</sup>, S.J. Bolton<sup>5</sup>, and James W. Alexander<sup>1</sup>

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**Abstract:** On 29 September 2022 NASA's Juno spacecraft performed the first close flyby of Jupiter's moon Europa since Galileo's last encounter with the icy body in 2000. Juno's low-light sensitive Stellar Reference Unit (SRU) [1, 2] was used to capture a broadband visible (450-1100 nm) image of Europa's surface at a resolution of 256-340 m/pixel (sub-spacecraft altitude: 412 km) while the surface was illuminated only by Jupiter-shine (incidence angle: 48-51 degrees).

This innovative use of a high-resolution star camera, designed to detect dim stars, produced the highest resolution image ever of this region. It revealed an intricate network of cross-cutting ridges and lineated bands in a  $3 \times 10^4$  km<sup>2</sup> region between  $\sim 0$ -6°N and 43.5-51°W that was previously identified as "ridged plains and undifferentiated linea" based on high-sun 1 km Galileo coverage [3]. An intriguing 37 km (east-west) by 67 km (north-south) chaos feature is a newly resolved highlight of the SRU image, appearing to have undergone a unique geologic process relative to its surroundings. Low-albedo deposits, similar to features previously associated with hypothesized subsurface activity [4], are seen to flank several proximal ridges.

The SRU image allows us to fill gaps in the geologic mapping of Europa's surface in a region particularly rich with cross-cutting features, and provides a new set of visual clues to interrogate against theories of the chaos formation processes. Our presentation will discuss our ongoing study of these topics [5].



**Figure 1.** Juno Stellar Reference Unit (SRU) image of Europa's surface collected 29 September 2022 under illumination by Jupiter-shine.

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**References:**

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