

Последние данные о центральном остатке SN 1987A

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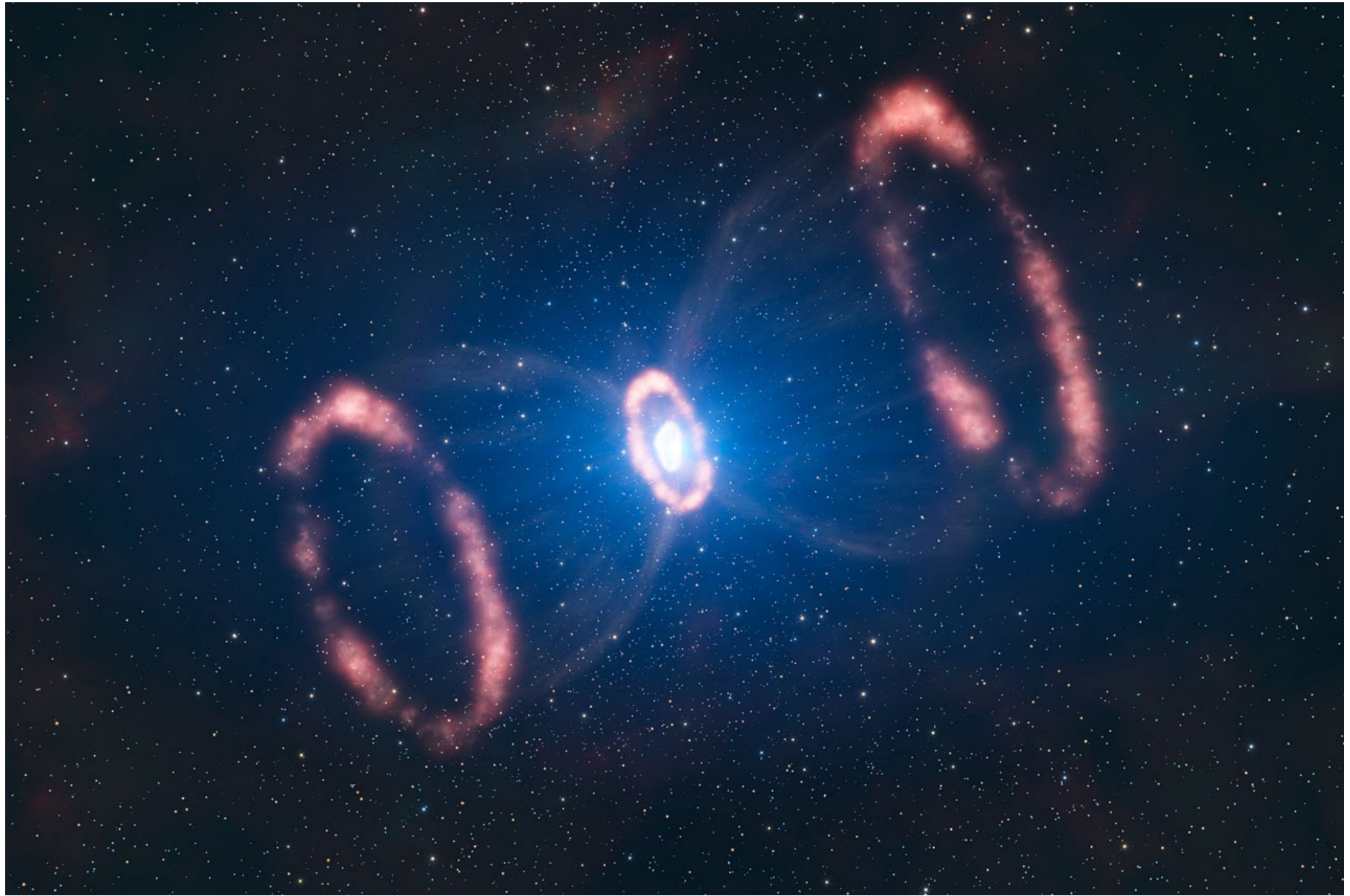
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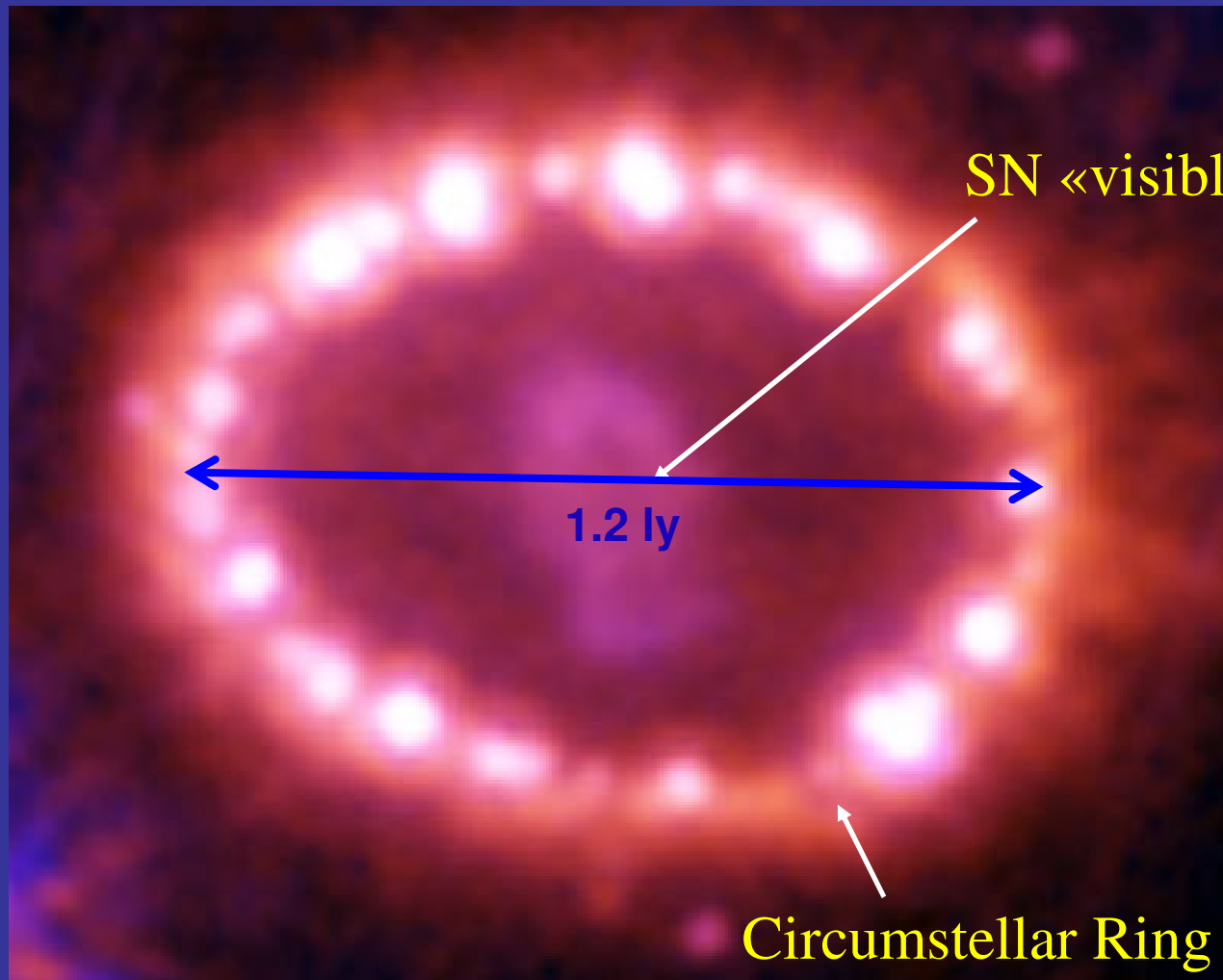
“Зацепинские чтения”

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Bruno Leibundgut
ESO





SN 1987A 16 years old (HST Nov. 28, 2003)
Interaction of shock wave with the circumstellar ring

observer →

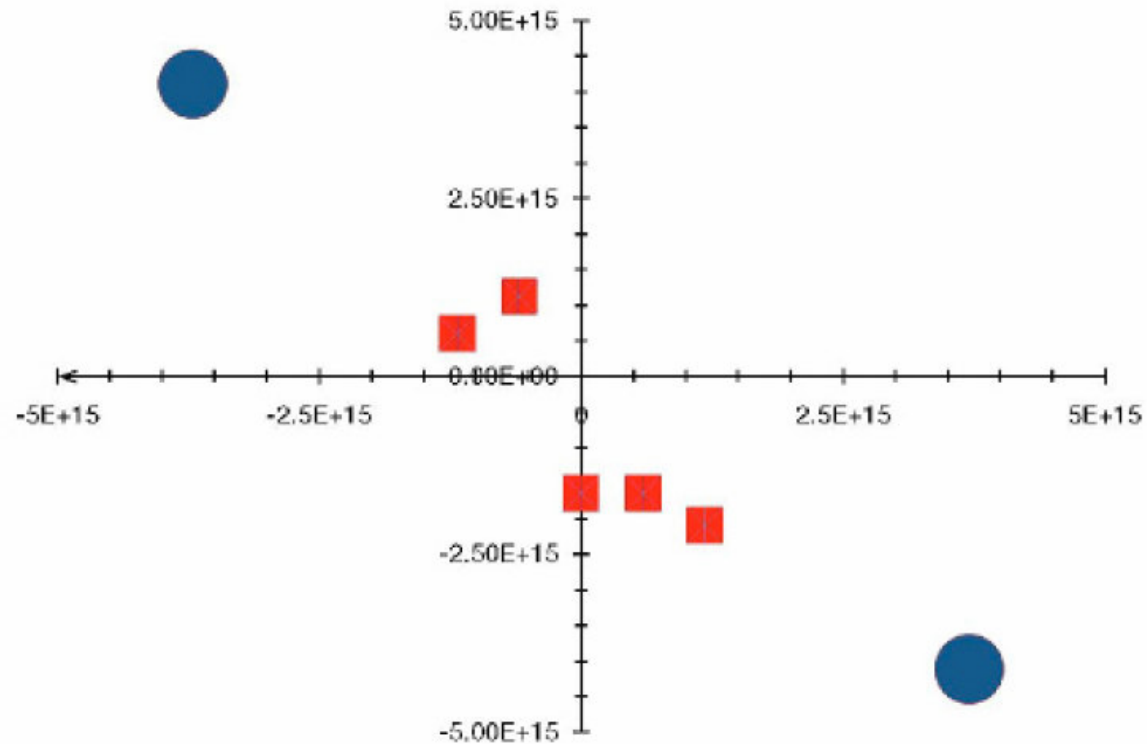


Fig. 9. Schematic view of the ejecta distribution of the ejecta relative to the the ring as seen in the $1.644 \mu\text{m}$ line. *Top:* the distances from the centre are given in meters, the observer is located on the left. This figure demonstrates that the ejecta mostly lie in the same plane as defined by the equatorial ring. The squares only give approximate emission centres. In reality the emission is more diffuse, see text for details.

The 3-D structure of SN 1987A's inner ejecta[★]

K. Kjær^{1,2}, B. Leibundgut^{2,3}, C. Fransson^{4,5}, A. Jerkstrand^{4,5}, and J. Spyromilio²

A&A 517, A51 (2010)

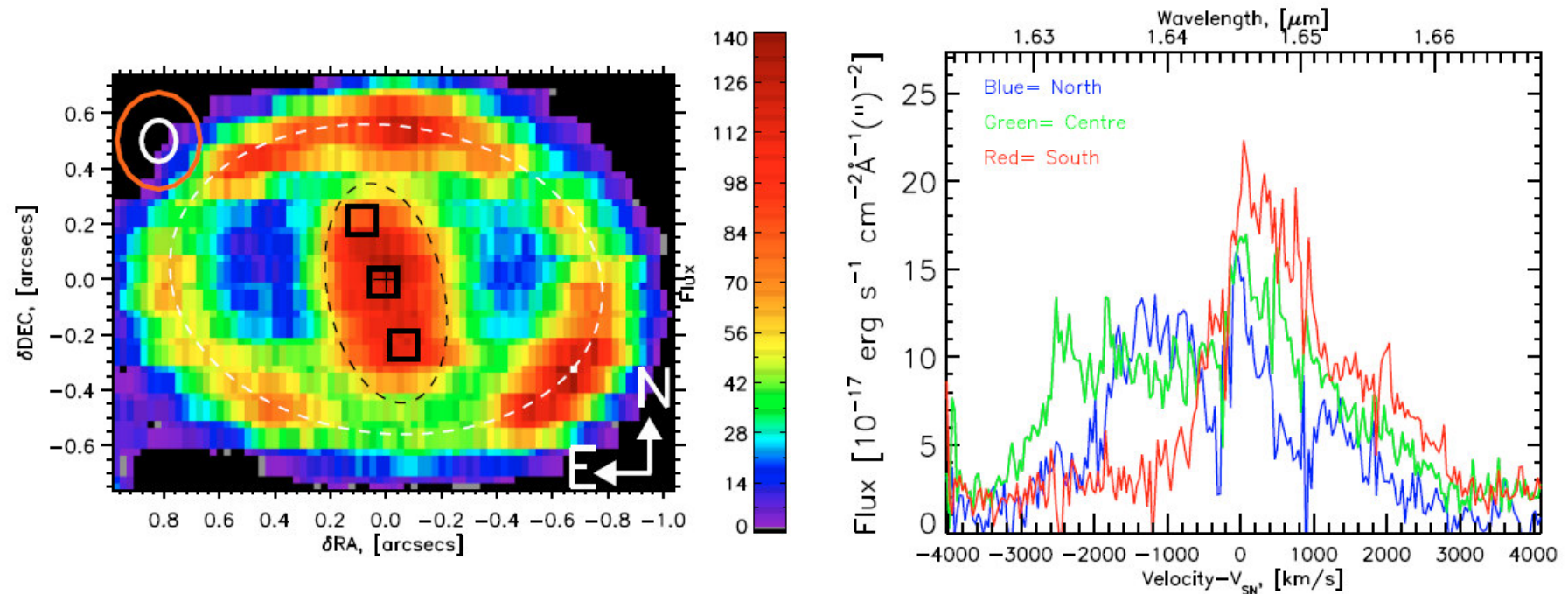
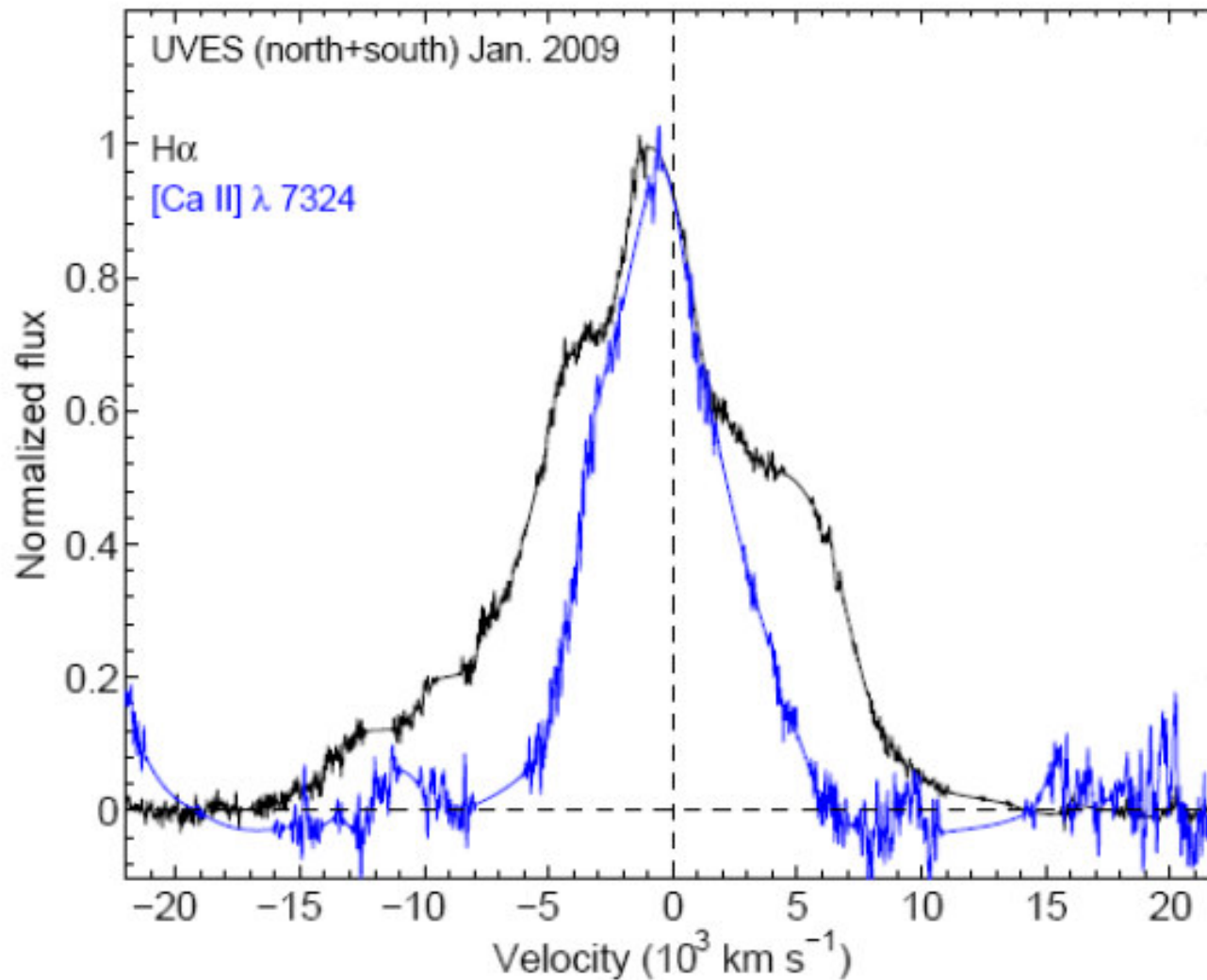


Fig. 3. *Left panel:* image of the 1.644 μm [Si I]+[Fe II] feature. The white dashed ellipse indicates the apparent shape of the inner ring, which is centred on (0, 0) marked with a cross. The ejecta shape is indicated by the black dashed ellipse. The ellipses in the top left corner show the 50% (80% in red) encircled energy area from a point source. The colour bar gives the flux intensity in 10⁻¹⁸ erg s⁻¹ cm⁻². The right panel shows the line profile of the 1.644 μm feature extracted at three different positions shown in the left panel. The blue curve corresponds to the upper most extraction box, the green to the middle box, and the red curve to the bottom box.



Fransson et al. 2012

B. Leibundgut 16th Workshop on Nuclear Astrophysics, Ringberg Castle,
Germany, March 26-30, 2012

<http://www.mpa-garching.mpg.de/Hydro/NucAstro/prog12.html>

Larsson et al.

The Astrophysical Journal, 768:89 (17pp), 2013 May 1

THE MORPHOLOGY OF THE EJECTA IN SUPERNOVA 1987A: A STUDY OVER TIME AND WAVELENGTH

ABSTRACT

.... Both the $H\alpha$ and the $[\text{Si i}] + [\text{Fe ii}]$ line profiles show that the ejecta are distributed fairly close to the plane of the inner circumstellar ring, which is assumed to define the rotational axis of the progenitor star. ...

...There is no clear symmetry axis for all the emission. Instead, we find that the emission is concentrated to clumps and that the emission is distributed somewhat closer to the ring in the north than in the south....