

# SUPERNOVAE NUMERICAL RELATIVITY

- Extreme compactness requires GR effects
- Full GR still very difficult
- Custom approximations often developed
- Important to many fields in astronomy

SCALE 22X



NASA/ESA/CSA JWST, SN 1987A Remnant



ERIK WESSEL

$z = 0.0$

SCALE 22X

# COSMOLOGY

## NUMERICAL RELATIVITY

- Deep mathematical questions about universe at the largest scales
- Numerical relativity essential for some questions
- Still a nascent technique in the field

500 Mpc

Adapted from Macpherson, Price, Lasky, 2019