Preliminary plan for the lecture "Astrophysics" in WS 2023/24

"Classical" astrophysics

"ART" astrophysics and cosmology

Topic 1: Introduction and overview

Topic 2: Model zones and structures in the universe

Topic 3: Radiation and transport

Topic 4: Measurement of distances, masses, and velocities

Topic 5: Cosmic rays

Topic 6: Stellar structure equations

Topic 7: Stellar energy sources

Topic 8: Stars with different pressure sources

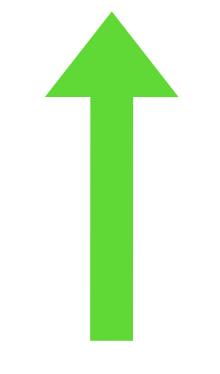
Topic 9: Structure formation

Topic 10: Birth of stars

Topic 13: Galaxies

Topic 11: Scaling of main sequence stars

Topic 12: Death scenarios



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Topic 14: Newtonian Cosmology

Topic 15: SRT

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Topic 16 ART (Introduction in 3 sessions)

"Crash course"

Topic 17: Outer Schwarzschild metric

Topic 18: Rotation of perihelion

Topic 19: Deflection of light Topic 20: Gravitational waves

Topic 21: Inner Schwarzschild metric and star equilibria

Topic 22: Time-dependent metric

Topic 23: Gravitational collapse and Black Holes

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Topic 25: Inflation (Introduction in 2 sessions)

Topic 26: Inhomogeneous Cosmology (Introduction in 2 sessions)