



The cosmic legacy of evolved stars

How to observe and model these precious witnesses of the past and present history of galaxies across the Universe

**20th Vatican Observatory
Summer School**

**30 May - 25 June
2027**

Castel Gandolfo - Italy

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The later stages of stellar evolution stand at the frontier of modern astrophysics, where extreme physics, complex chemistry, and transformative processes converge. As stars climb the red giant and asymptotic giant branches, shed their outer layers, and pass through the planetary nebula phase before fading into white dwarfs, they drive chemical enrichment across their host galaxies — making them central to understanding how galaxies assemble over cosmic time. With **JWST** and the **Roman Space Telescope** ushering in a new observational era, demand for expertise in evolved stellar physics has never been greater. This curriculum — spanning stellar interiors, nucleosynthesis, dust formation, mass loss, and the use of evolved stars as distance indicators and population tracers — equips participants with the physical intuition and observational tools to address open questions at the intersection of stellar evolution, interstellar chemistry, and galaxy formation.

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by **30 September 2026**

