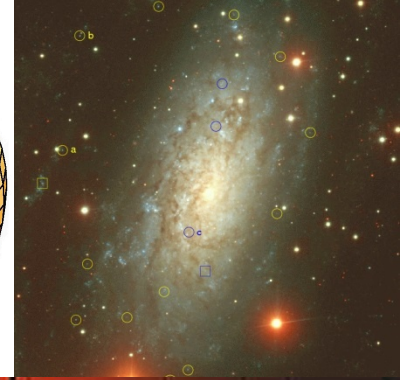
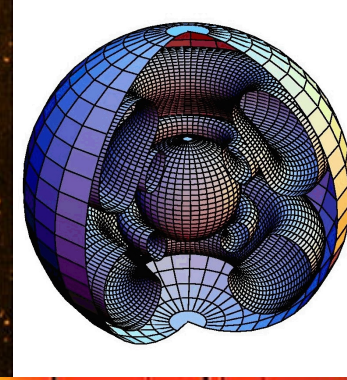




$$n_i \sum_{j \neq i} (R_{ij} + C_{ij}) =$$
$$\sum_{j \neq i} n_j (R_{ji} + C_{ji})$$
$$\mu \frac{dI_\nu}{d\tau_\nu} = I_\nu - S_\nu$$



Galaktische Astrophysik & Quantitative Spektroskopie

Norbert Przybilla



Institut für Astro- und Teilchenphysik

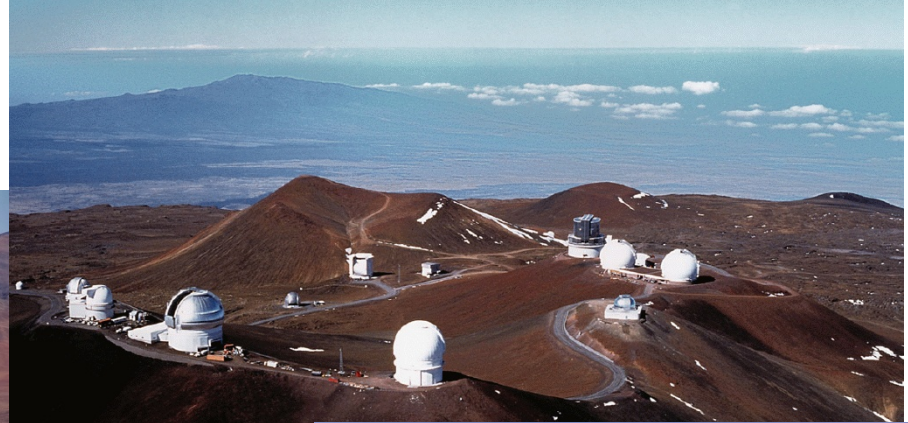
Unsere Labs



Paranal



La Silla



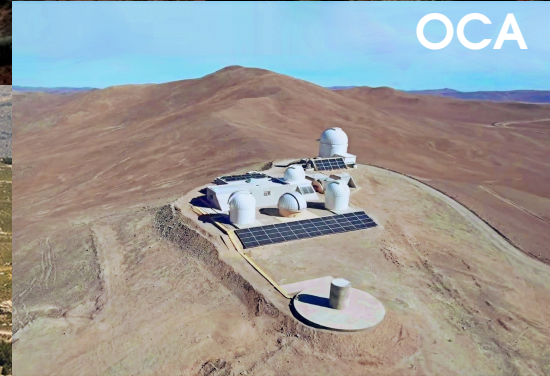
Mauna Kea



La Palma



Calar Alto



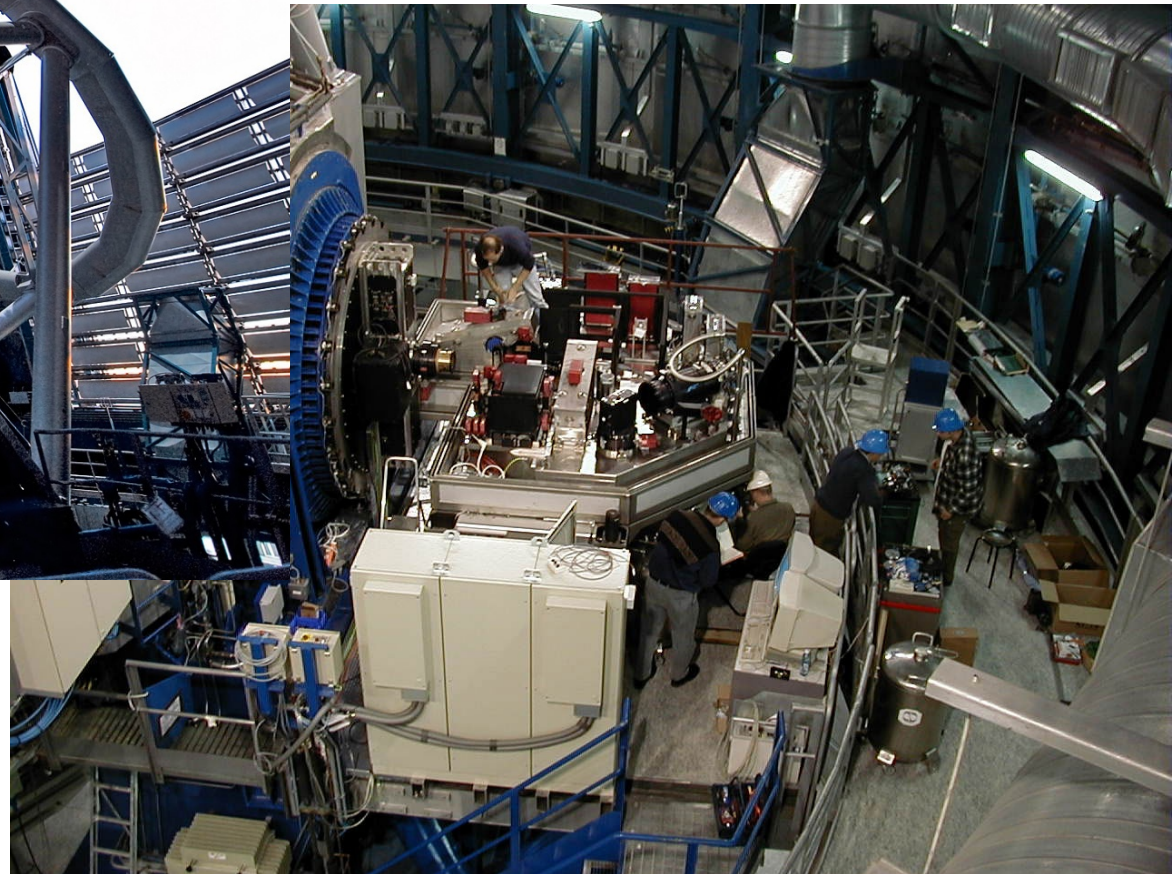
OCA

Unsere Labs

ESO VLT: UVES Spektrograph



ESO VLT

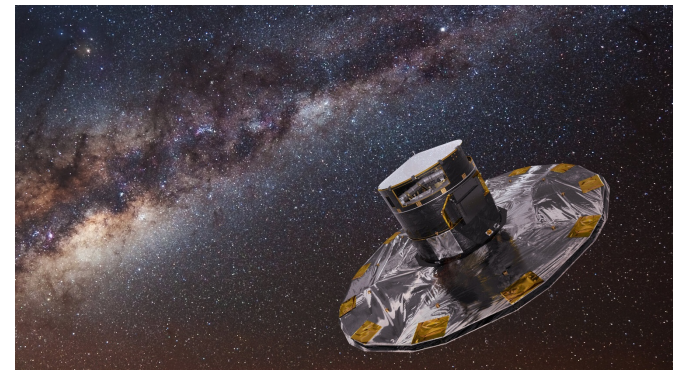


Arbeitsgebiete



Themen Bachelor-Theses

<https://www.uibk.ac.at/astro/teaching/bachelor.html>



ESA/Gaia Mission

Kinematik massereicher Sterne in der Milchstraße

- Gaia: Position (α, δ), Distanz, Eigenbewegung (μ_α, μ_δ)
- Radialgeschwindigkeit via Spektroskopie

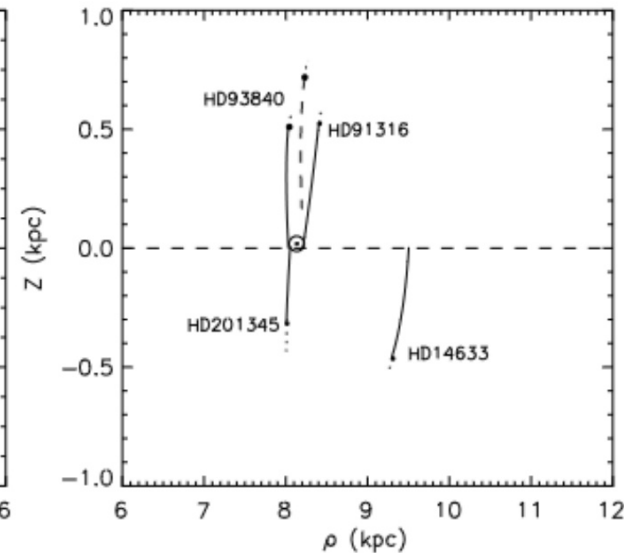
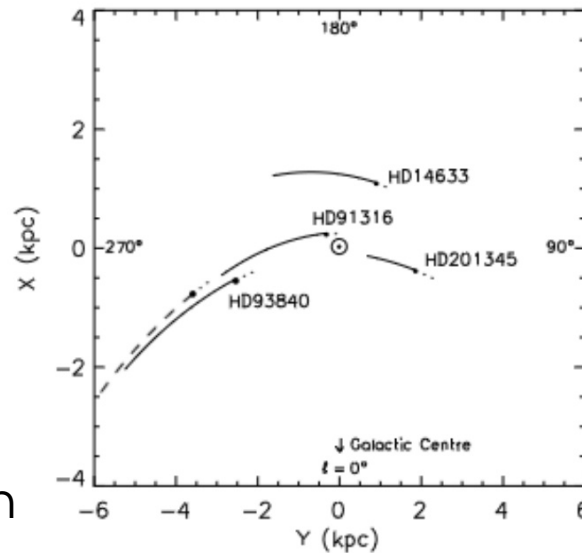


Bestimmung von Trajektorien im galaktischen Gravitationspotential

- massereiche Sterne = jung, folgen galaktischer Rotation
- **Runaways**

Runaways:
pekuliäre Raumbewegung,
aus SN in Doppelstern oder
dynamischer Auswurf

- Identifikation von
interessanten Targets für
follow-up Beobachtungen



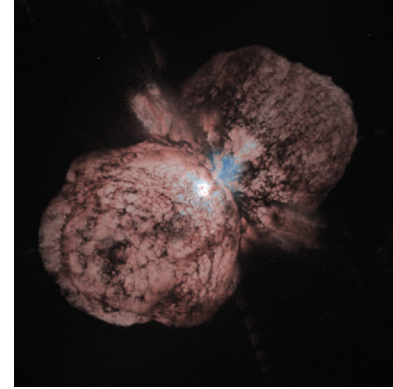
Weßmayer et al. (2024)

Themen Bachelor-Theses

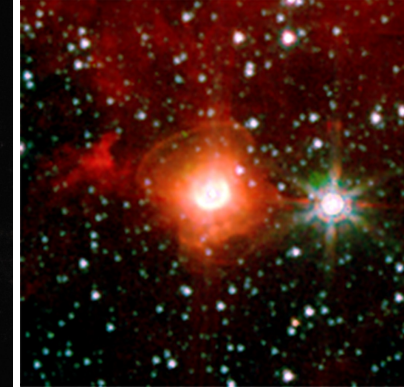
<https://www.uibk.ac.at/astro/teaching/bachelor.html>

Rotationsgeschwindigkeiten von LBVs

- LBVs: Luminous Blue Variables
extrem leuchtkräftige massereiche Sterne mit Ausbruchs-Phasen ("failed SN")
- genaue Ursache der großen Eruptionen (Massenverlustrate $\sim 1M_{\odot}/\text{yr}$) unklar, aber: LBVs am **$\Omega\Gamma$ -Limit**
- Rotationsgeschwindigkeiten unbestimmt, typischerweise nicht meßbar



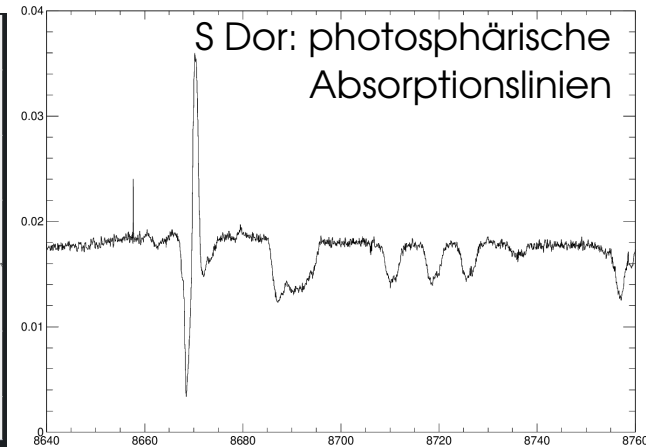
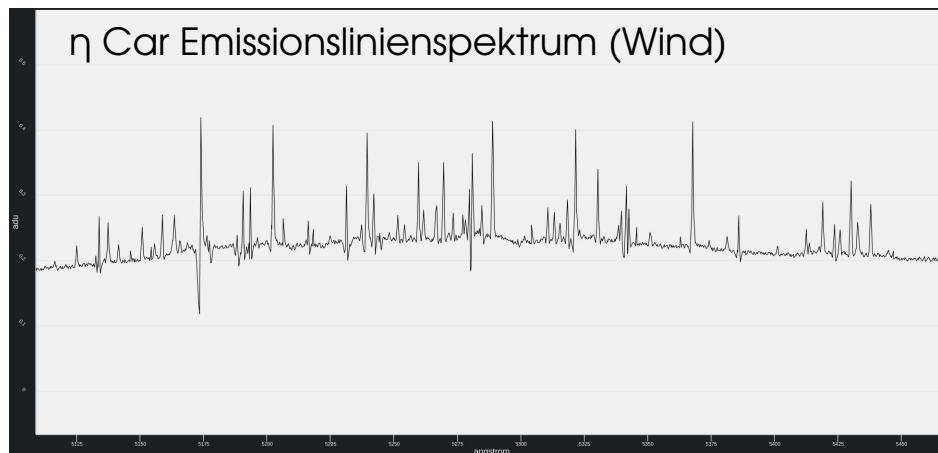
η Carinae



NASA/STScI

HD168625

NASA/JPL

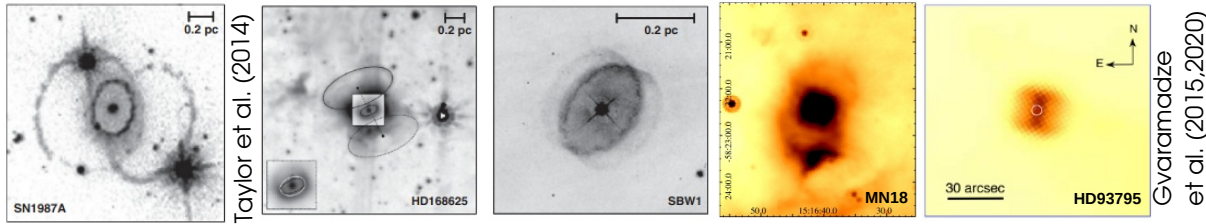


erstmalige Bestimmung von Rotationsgeschwindigkeiten von LBVs



Themen Master-Theses

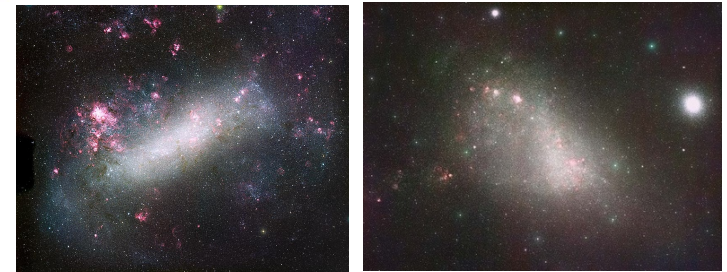
1) Quantitative Spectroscopy of Siblings of the SN1987A Progenitor Star



characterise
doomed
stars

2) Detailed Spectral Analyses of Massive Stars in the Magellanic Clouds

- present-day endpoint of galactochemical evolution



D. Matlin/AAO

3) Quantitative Spectroscopy of Blue Supergiants in NGC300 & IC1613

- first detailed stellar analyses at the border/beyond the Local Group

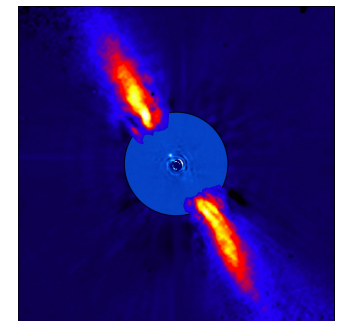


ESO

DES/DOE/Fermilab/NCSA & CTIO/NOIRLab/NSF/AURA

4) Chemical Profiling of Hot Host Stars of Directly Imaged Exoplanets

- know the star, know the planet



ESO

for further information ask later or
mailto: norbert.przybilla@uibk.ac.at