

# Sophia Katharina Stuber

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## Education

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### PhD in Astronomy

UNIVERSITY OF HEIDELBERG

- Thesis title: "The ISM and Star-formation in Nearby Galaxies"
- Supervisor: Dr. Hans-Walter Rix (MPIA), Dr. Eva Schinnerer (MPIA) and Prof. Dr. Ralf Klessen (ITA)

02/2022 - ongoing

Heidelberg, Germany

### Master of Science Physics

UNIVERSITY OF HEIDELBERG

- Thesis title: "The Molecular Gas Morphology of Nearby Galaxies"
- Supervisor: Dr. Eva Schinnerer (MPIA) and Dr. Henrik Beuther (MPIA)
- Thesis Grade: 1.1
- Master Grade: 1.1

09/2019 – 01/2022

Heidelberg, Germany

### Bachelor of Science Physics

UNIVERSITY OF HEIDELBERG

- Thesis title: "The abundance of nuclear molecular outflows in nearby galaxies"
- Supervisor: Dr. Eva Schinnerer (MPIA)
- Thesis Grade: 1.0
- Bachelor Grade: 1.7

10/2016 – 8/2019

Heidelberg, Germany

### Abitur

HOHENLOHE GYMNASIUM ÖHRINGEN

Grade 1.1

6/2016

Öhringen, Germany

## Skills

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**Programming** LaTeX, Python, C++, CASA, GILDAS

**Languages** German (native), English (fluent), Japanese (proficient), French (beginner)

## Teaching and Outreach

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### Supervision of Bachelor students

MAX-PLANCK INSTITUTE FOR ASTRONOMY

- Supervising a Bachelor student (D.G.), including the project design and help with the execution.

10/2023 – ongoing

Heidelberg, Germany

### MPIA Outreach fellow

MAX PLANCK INSTITUTE FOR ASTRONOMY

- Outreach duties including planetarium presentations, accompanying school groups and other events

06/2022 – ongoing

Heidelberg, Germany

### Tutor for lab course "Stellar CCD photometry"

MAX-PLANCK INSTITUTE FOR ASTRONOMY

- Lab course for Bachelor students at the University of Heidelberg

10/2022 – 1/2022

Heidelberg, Germany

### Tutor "Basiskurs Schlüsselkompetenzen"

UNIVERSITY OF HEIDELBERG, DEPARTMENT OF PHYSICS AND ASTRONOMY

- Introductory course for first semester students on academic studies

WS 2017/18 & 2018/19

Heidelberg, Germany

### Foundation and teaching of the "Japan-AG" school course

HOHENLOHE GYMNASIUM ÖHRINGEN

- Introductory course into Japanese culture and language

9/2015 – 7/2016

Öhringen, Germany

## Publications

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### **The Gas Morphology of Nearby Main Sequence Galaxies**

DOI: 10.1051/0004-6361/202346318

Stuber et al. 2021 A&A, 676, 113

### **Frequency and Nature of Central Molecular Outflows in Nearby Star-Forming Galaxies**

DOI: 10.1051/0004-6361/202141093

Stuber et al. 2021 A&A, 653, 172

### **Co-author publications:**

#### **Fuelling the nuclear ring of NGC 1097**

DOI: 10.1093/MNRAS/STAD1554

Sormani, Barnes et al. 2023, MNRAS, 523, p2918–2927

#### **Kinematic analysis of the super-extended HI disk of the nearby spiral galaxy M83**

DOI: 10.48550/ARXIV.2304.02037

Eibensteiner et al. 2023, accepted for publication in A&A

#### **PHANGS-JWST First Results: A Statistical View on Bubble Evolution in NGC 628**

DOI: 10.3847/2041-8213/ACA6E4

Watkins et al. 2023, ApJL, 944, L24

#### **PHANGS-JWST First Results: Multiwavelength View of Feedback-driven Bubbles (the Phantom Voids) across NGC 628**

DOI: 10.3847/2041-8213/ACA7B9

Barnes et al. 2023, ApJL, 944, L22

#### **PHANGS-JWST First Results: Rapid Evolution of Star Formation in the Central Molecular Gas Ring of NGC1365**

DOI: 10.3847/2041-8213/ACAC9E

Schinnerer et al. 2023, ApJL, 944, L15

#### **PHANGS-JWST First Results: Stellar-feedback-driven Excitation and Dissociation of Molecular Gas in the Starburst Ring of NGC 1365?**

DOI: 10.3847/2041-8213/ACA973

Liu et al. 2023, ApJL, 944, L19

#### **PHANGS-JWST First Results: Spurring on Star Formation: JWST Reveals Localized Star Formation in a Spiral Arm Spur of NGC 628**

DOI: 10.3847/2041-8213/ACA674

Williams et al. 2023, ApJL, 941, L27

#### **The PHANGS-JWST Treasury Survey: Star Formation, Feedback, and Dust Physics at High Angular Resolution in Nearby Galaxies**

DOI: 10.3847/2041-8213/ACAAAE

Lee et al. 2023, ApJL, 944, L17

#### **AGN-driven Cold Gas Outflow of NGC 1068 Characterized by Dissociation-sensitive Molecules**

DOI: 10.3847/1538-4357/AC80FF

Saito et al 2022b, ApJL, 935, 155

#### **The Kiloparsec-scale Neutral Atomic Carbon Outflow in the Nearby Type 2 Seyfert Galaxy NGC 1068: Evidence for Negative AGN Feedback**

DOI: 10.3847/2041-8213/AC59AE

Saito et al 2022a, ApJL, 927, L32

#### **PHANGS-ALMA: Arcsecond CO(2-1) Imaging of Nearby Star-forming Galaxies**

DOI:10.3847/1538-4365/AC17F3

Leroy et al 2021, ApJS, 257, 43

## **New constraints on the 12CO(2-1)/(1-0) line ratio across nearby disc galaxies**

DOI:10.1093/MNRAS/STAB859

den Brok et al. 2021, MNRAS, 504, 3, p3221–3245

## **The Physics at High Angular resolution in Nearby Galaxies (PHANGS) Surveys**

DOI:10.18727/0722-6691/5151

Schinnerer et al. 2019, ESO Messenger Messenger, vol. 177, p. 36-41

## **Talks and Posters**

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### **Talks:**

#### **The gas morphologies in nearby main sequence galaxies from PHANGS**

COLLOQUIUM: RESEARCH CENTER FOR ASTRONOMY AND APPLIED MATHEMATICS

*November 21, 2023*

*Webinar of the Academy of Athens*

#### **The gas morphology of nearby star forming galaxies**

CONFERENCE: GALACTIC BARS

*July 03-07, 2023*

*Granada, Spain*

#### **View on dense gas in M51**

WORKSHOP: THEORY MEETS OBSERVATIONS

*December 13-16, 2022*

*Heidelberg, Germany*

#### **Central Molecular Zones from a different Angle**

WORKSHOP: PUZZLES OF THE GALACTIC CENTRE

*September 05-07, 2022*

*Heidelberg, Germany*

#### **Molecular Gas Outflows and Gas Morphology in Nearby Main-Sequence Galaxies**

CONFERENCE: FROM STARS TO GALAXIES II

*June 20-24, 2022*

*Gothenburg, Sweden*

#### **Fine look at molecular gas and star-formation in nearby galaxies**

RETREAT OF THE MPIA GALAXY AND COSMOLOGY DEPARTMENT 2022

*February 07-10, 2022*

*Ringberg, Germany*

#### **Molecular gas outflows and gas morphology in nearby main-sequence galaxies**

IRAM: 50TH YOUNG EUROPEAN RADIO ASTRONOMERS CONFERENCE

*August 24-27, 2021*

*Virtual*

### **Posters:**

#### **Molecular Gas Outflows and Gas Morphology in Nearby Main-Sequence Galaxies**

FROM STARS TO GALAXIES II

*June 20-24, 2022*

*Gothenburg, Sweden*

#### **The First Cloud-by-Cloud Dense Gas Map of an External Galaxy**

IRAM: MULTI-LINE DIAGNOSTICS OF THE INTERSTELLAR MEDIUM

*April 04-06, 2022*

*Nice, France*

#### **The Abundance of Nuclear Molecular Outflows in Nearby Star-forming Galaxies**

PHYSICS OF STAR FORMATION: FROM MILKY WAY CLOUDS TO PROTOSTELLAR DISKS

*December 01-03, 2020*

*Virtual*