Aaron David Schneider

astrophysicist

About Me

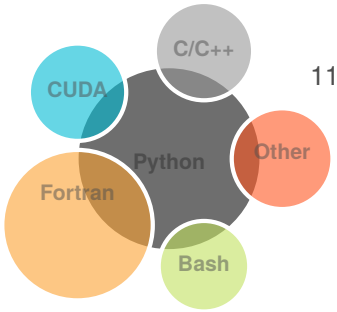
nationality
german

birthplace
Siegen, Germany

birthdate
19.03.1996

civil status
married, 1 child

Programming



github:
@AaronDavidSchneider

Languages

german
first language

english
fluent

Interests

hiking
singing
programming

Education

09/06-06/14 **Highschool** Evangelisches Gymnasium Siegen-Weidenau

- advanced courses: physics, math
- A-level: Grade 1.6 (UK: A)

10/15-08/18 **Bachelor in Physics** Universität Heidelberg

- grade: 2.0 (UK: B)
- specialization: astrophysics and computational physics
- bachelor thesis: Surface waves in protoplanetary disks induced by outbursts
- supervisor of thesis: Prof. Dr. Cornelis P. Dullemond

10/18-10/20 **Master in Physics** Universität Heidelberg and Max Planck Institute for Astronomy

- grade: 1.5 (UK: A)
- specialization: Machine Learning and GPU Computing
- core courses: astronomical techniques, general relativity, theoretical astrophysics, cosmology, environomental physics
- master thesis: chemical composition of gas giants probed by accretion
- supervisor of thesis: Dr. Bertram Bitsch

11/20-12/23 **Doctor of Science: Astronomy** Københavns Universitet and KULeuven

- title: Connecting the atmosphere with the interior in hot giant exoplanets
- Horizon 2020, Marie Sklodowska-Curie grant No 860470 (Chameleon)
- double degree program with Leuven and København
- supervisors: Dr. Ludmila Carone, Prof. Dr. Uffe Gråe Jørgensen, Prof. Dr. Leen Decin

Softwaredevelopment (Code Owner)

2019-2021 `SonosAlarm` **(Python)** https://github.com/AaronDavidSchneider/SonosAlarm
`HomeAssistant` component for controlling the alarm of Sonos devices. Part of the main integration since 2021.

2020-2021 `chemcomp` **(Python)** https://chemcomp.readthedocs.io/en/latest/
Global planetformation model, used in more than 11 publications.

2021-2023 `expeRT/MITgcm` **(Fortran, Python)** https://exorad.readthedocs.io/en/latest/
Accurate and efficient radiative transfer for hot Jupiters in the 3D climate model `MITgcm`, used in more than 7 publications.

2022-2023 `opacmixer` **(Python)** https://opacmixer.readthedocs.io/en/latest/
Machine learning framework for the accurate and efficient emulation of opacities in climate models (GCMs) or other radiative hydrodynamical applications.

Fist-Author Refereed Publications

09/18 **Schneider, A. D.; Dullemond, C. P.; Bitsch, B.** A & A, Volume 617, id.L7
Surface waves in protoplanetary disks induced by outbursts: Concentric rings in scattered light

08/21 **Schneider, A. D. and Bitsch, B.** A & A, Volume 654, id.A71
How drifting and evaporating pebbles shape giant planets I: Heavy element content and atmospheric C/O

10/21 **Schneider, A. D. and Bitsch, B.** A & A, Volume 654, id.A72
How drifting and evaporating pebbles shape giant planets II: volatiles and refractories in atmospheres

02/22 **Schneider, A. D.; Carone L.; Decin L.; Jørgensen, U.G.; Mollière, P.; Baeyens, R.; Kiefer, S.; Helling, C.** A & A, Volume 664, id.A56
Exploring the deep atmospheres of HD 209458b and WASP-43b using a non-gray general circulation model

10/22 **Schneider, A. D.; Carone L.; Decin L.; Jørgensen, U.G.; Helling, C.** A & A, Volume 666, id.L11
No evidence for radius inflation in hot Jupiters from vertical advection of heat

12/23 **Schneider, A. D.; Mollière, P.; Louppe, G.; Carone, L.; Jørgensen, U. G.; Decin, L.; Helling, C.** A & A, Forthcoming article
Harnessing machine learning for accurate treatment of overlapping opacity species in general circulation models

Other Refereed Publications

05/21 **Bitsch, B; Raymond, S. N.; Buchhave, L. A.; Bello-Arufe, A.; Rathcke, A. D.; Schneider, A. D.** A & A, Volume 649, id.L5
Dry or water world? How the water contents of inner sub-Neptunes constrain giant planet formation and the location of the water ice line

03/22 **Mollière, P.; Molyarova, T.; Bitsch, B.; Henning, T.; Schneider, A.D.; Kreidberg, L.; Eistrup, C.; Burn, R.; Nasedkin, E.; Semenov, D.; Mordasini, C.; Schlecker, M.; Schwarz, K. R.; Lacour, S.; Nowak, M.; Schulik, M.** The Astrophysical Journal, Volume 934, Issue 1, id.74
Interpreting the atmospheric composition of exoplanets: sensitivity to planet formation assumptions

09/22 **Bitsch, B.; Schneider, A. D.; Kreidberg, L.** A & A, Volume 665, id.A138
How drifting and evaporating pebbles shape giant planets. III. The formation of WASP-77A b and τ Boötis b

01/23 **Samra, D.; Helling, C.; Chubb, K. L.; Min, M.; Carone, L.; Schneider, A. D.** A & A, Volume 669, id.A142
Clouds form on the hot Saturn JWST ERO target WASP-96b

06/23 **Sainsbury-Martinez, F.; Tremblin, P.; Schneider, A. D.; Carone, L.; Baraffe, I.; Chabrier, G.; Helling, C.; Decin, L.; Jørgensen, U. G.** MNRAS, Volume 524, 1316–1325
Evidence of Radius Inflation in Radiative GCM Models of WASP-76b due to the Advection of Potential Temperature

09/23 **Chatziastros, L.; Bitsch, B.; Schneider, A. D.** A & A, Forthcoming article
Constraining the formation history of the HAT-P-11 system by atmospheric abundances

Experience

09/14-06/15	**Year abroad** Theology studies	Carnforth
2016-2019	**Private tuition** Highschool math and physics	Heidelberg
2020	**Tuition** Tuition of Introduction to Astronomy & Astrophysics II	Heidelberg
2023	**Art project** Computing the analemma for a sculpture made by danish artist Bjørn Nørregard	København

Volunteer Engagement

2015-2019	**voluntary work at a christian university group** Hochschul SMD Heidelberg	Heidelberg
2022-	**sound engineering** local church	København