

# Stefano Bellotti

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## Current position

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06/2023 - 09/2023      Postdoctoral Researcher at Universiteit Leiden Sterrewacht, Leiden, The Netherlands

## Education

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2020 - 2023      Ph.D. in Astronomy at the Institut de Recherche en Astrophysique et Planétologie (IRAP), Université Toulouse III - Paul Sabatier, Toulouse, France  
Title: "Searching new worlds with SPIRou: tackling stellar activity"  
Supervisors: Pascal Petit (IRAP), Julien Morin (LUPM), Gaïté Hussain (ESTEC-ESA)

2022 - 2023      Visiting researcher at European Science and Technology Research Centre (ESTEC-ESA).

2017 - 2019      MSc in Astrophysics, Niels Böhr Institute, University of Copenhagen, Denmark.

2013 - 2017      BSc in Physics, Physics Department, University of Pavia, Italy.

## Skills

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Python      Upper intermediate: cluster usage and astronomical packages (AstroPy, PyRAF, Pyfits, Astroquery)

Languages      Italian (native), English (fluent), and French (B1 level)

## Community service

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Sep 2023 - present	Co-organiser of the Equity, Diversity and Inclusion journal club at Leiden Observatory.
Sep 2023 - present	Member of the Equity, Diversity and Inclusion committee at Leiden Observatory.
Apr 2023 - present	Referee for the Astrophysical Journal
Feb 2022 - Feb 2023	LOC member of the Planet ESLAB 2023 Symposium held at ESA-ESTEC, Noordwijk, The Netherlands.
Apr 2022	Co-chair of the Holland-Area Exoplanet Science Meeting (HAESM), held in hybrid format at ESTEC-ESA, Noordwijk, Netherlands.
Dec 2020 - May 2021	Member of the organizing team of the "Ph.D. Day 2021": a one-day event dedicated to Ph.D. students to showcase their research and foster collaborations. Held online, Toulouse, France.
Sep 2020 - Dec 2020	Member of the editing team of the " <i>Newcomer's guide at IRAP</i> ": a problem-solving document to describe all aspects of the Ph.D. student's life at IRAP, Toulouse, France.

## Observing experience and awarded time

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PI of proposals for SPIRou@Canada-Hawaii-France Telescope and ESPaDOnS@Canada-Hawaii-France Telescope, NEO-NARVAL@Telescope Bernard-Lyot, and HARPS-Pol@ESO 3.6-m accounting 300+ hours.

Nov 2021	Visitor mode operation for eight nights at Telescope Bernard-Lyot.
Aug 2018	MSc course "Observational Astronomy": observing, data reduction with IRAF and analysis for seven nights at Nordic Optical Telescope, La Palma, Spain.

## Publications

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**ADS Library:** <https://ui.adsabs.harvard.edu/public-libraries/05FAf-irTF-0aqZxu4Yblw>

### Refereed

**Bellotti S.**, Vidotto A., Fares R., +8 others, "*The space weather around the exoplanet GJ 436b. I. The large-scale stellar magnetic field*", 2023a, *Astronomy & Astrophysics*, 676, A139.

**Bellotti S.**, Morin J., Lehmann L., +23 others, "*Monitoring the magnetic field of AD~Leo with SPIRou, ESPaDOnS and NARVAL: Towards a magnetic polarity reversal?*", 2023b, *Astronomy & Astrophysics*, 676, A56.

**Bellotti S.**, Petit P., Morin J., +5 others, "*Mitigating stellar activity jitter with different masks for least-squares deconvolution: Analysis of a parametric and a randomised line selection*", 2022, *Astronomy & Astrophysics*, 657, A107.

**Bellotti S.** and Korhonen H. "*Simulating starspot activity jitter: realistic estimates for a representative sample of known F--M exoplanet hosts*", 2021, *Astronomische Nachrichten*, 342:926-940.

**Bellotti S.**, Zabludoff A., Belikov R., +2 others, "*Detecting Exoplanets Using Eclipsing Binaries as Natural Starshades*", 2020, *The Astronomical Journal*, 160, 131.

Vidotto A. A., +2 other, **Bellotti S.**, +4 others, "*The space weather around the exoplanet GJ 436b. II. Stellar wind-exoplanet interactions*", 2023, *Astronomy & Astrophysics*, arxiv e-print.

Moutou C., +10 others, **Bellotti S.**, +9 others, "*Characterizing planetary systems with SPIRou: M-dwarf planet-search survey and the multiplanet systems GJ 876 and GJ 1148*", 2023, *Astronomy and Astrophysics*, arxiv e-print

Fouque P., +4 others, **Bellotti S.**, +18 others, "*The SPIRou Legacy Survey. Rotation period of quiet M dwarfs from circular polarization in near-infrared spectral lines: I. The SPIRou APERO analysis*", 2023, *Astronomy & Astrophysics*, 672, A52.

Carmona A., Delfosse X., **Bellotti S.**, +36 others, "*Near-IR and optical radial velocities of the active M-dwarf star Gl~388 (AD~Leo) with SPIRou at CFHT and SOPHIE at OHP: A 2.23 days rotation period and no evidence for a co-rotating planet*", 2023, *Astronomy & Astrophysics*, 674, A110.

Cortes-Zuleta P., +10 others, **Bellotti S.**, +32 others, "*Optical and near-infrared stellar activity characterization of the early M dwarf Gl 205 with SOPHIE and SPIRou*", 2023, *Astronomy & Astrophysics*, 673, A14.

Martioli E., +5 others, **Bellotti S.**, +53 others, "*TOI-1759 b: a transiting sub-Neptune around a low mass star characterized with SPIRou*", *Astronomy & Astrophysics*, 660, A86.

## Conference participation

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- Apr 2023      **Talk** at the BCool Meeting, 2023, Goettingen, Germany, with the title: *"Monitoring the large-scale magnetic field with SPIRou, ESPaDOnS and Narval. The case of AD Leo, CN Leo, DS Leo and EV Lac"*.
- Feb 2023      **Talk** at Exoplanets, Star and Planet Formation Seminar Series (ESPF), STScI (virtual) with the title: *"Is AD Leo featuring a polarity reversal of the large-scale magnetic field? Long-term monitoring across near-infrared and optical domains with SPIRou, ESPaDOnS and NARVAL"*.
- Aug 2022      **Talk** at the IAU General Assembly 2022, Busan, South Korea, with the title: *"Near-infrared long-term monitoring of AD Leo with SPIRou: towards a magnetic polarity reversal?"*.
- Jun 2022      **Talk** at the Lorentz workshop 'Life Around a Radio Star', Leiden, Netherlands, with the title: *"Magnetic fields of M dwarfs and stellar activity filtering techniques"*.
- Jun 2022      **Talk** and proceedings contribution to the ESO Hypatia Colloquia 2022 edition, online, with the title: *"Mitigating stellar activity using line selections for Least-Squares Deconvolution"*.
- Aug 2020      **Talk** at the Lunar and Planetary Laboratory Conference, Tucson, Arizona, US (held online) with the title: *"Detecting Extrasolar Planets Using Eclipsing Binaries as Natural Starshades"*.
- Jul 2022      **Poster** presentation at the CoolStars21 conference, Toulouse, France, with the title: *"Is AD Leo entering a polarity reversal? Long-term monitoring of the large-scale magnetic field with ESPaDOnS, NARVAL and SPIRou"*.
- May 2022      **Poster** presentation at the EXOPLANET IV conference, Las Vegas, US, with the title: *"Mitigating stellar activity jitter with a parametric and a randomised line selection for least-squares deconvolution"*.
- Oct 2021      **Poster** presentation at the Star-Planet Connection online conference with the title: *"Simulating starspot activity jitter for spectral types F–M: realistic estimates for a representative sample of known exoplanet hosts"*.
- Mar 2021      **Poster** presentation at the CoolStars20.5 online conference with the title: *"Spectropolarimetry in optical and near-IR for EV Lac and AD Leo: what is stellar activity's favourite colour?"*
- May 2019      **Poster** presentation at the Annual Danish Astronomy Meeting, Nyborg, Denmark with the title: *"Hunting exoplanets: detection limits due to starspots"*.