VITO SQUICCIARINI

CURRICULUM VITAE

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EMPLOYMENT HISTORY

Current Position

2019 - Present*	PhD Student	Università degli Studi di Padova

*Expected to graduate: September 2022

EDUCATION

2017-2019	Master in Astronomy	University of Padova, Italy
2013-2017	Bachelor in Physics	University of Padova, Italy

RESEARCH

My career so far has been focused on two main paths:

1. studying the occurrence of giant planets around intermediate and massive stars to get insights on their formation mechanisms;
2. assessing the possibility of biotic oxygen build-up in the atmospheres of habitable Earth-like planets.

To achieve these goals I have:

(a) contributed to data reduction and analysis of the ongoing direct-imaging BEAST survey;

(b) improved kinematic techniques to indirectly estimate stellar ages of B stars for a better mass determination of directly-imaged exoplanets and brown dwarfs;

(c) developed a tool bridging stellar evolution models with large catalogues to rapidly turn automatically collected photometric data of stellar samples into mass and age estimates;

(d) created a model that incorporates experimental evidence of photosynthetic bacteria thriving under the irradiation of M stars within the framework of models of the Earth's oxygenation history.

Main Research Projects

SpHere INfrared survey for Exoplanets (SHINE)
Guaranteed time direct-imaging search for exoplanets using the Spectro-Polarimetric High-contrast Exoplanet REsearch (SPHERE) planet-finder camera at VLT
Contributions: derivation of masses for the new binary systems discovered in Bonavita et al. (2021).

B-star Exoplanet Abundance Study (BEAST)
Large program searching for exoplanets through the SPHERE planet-finder camera at VLT
Contributions: data reduction and analysis; confirmation and characterization of candidate companions; age and mass determinations for the stellar host and the confirmed companions; interpretation of the results in the light of the existing models.

Atmospheres in a test tube (link)
Experiment studying the possibility for oxygenic photosynthesis to occur on habitable planets around M stars
Contributions: development of a toy model assessing the possibility of biotic oxygen buildup for a Earth-like planet orbiting a less massive star than the Sun.

LATEST SEMINARS AND TALKS

2022	contributed talk	The Sharpest Eyes on the Sky	Exeter, UK*
2022	selected speaker	ESO Hypatia Colloquium 2022	Garching, Germany*
2021	contributed talk	ESO Workshop: The Star-Planet Connection	virtual event
2021	contributed talk	From Clouds to Discs: A Tribute to the Career of Lee Hartmann	Dublin, Ireland*
2021	contributed talk	Star Clusters: the Gaia Revolution	Barcelona, Spain*
2021	contributed talk	EPSC 2021 – Europlanet Science Congress 2021	virtual event
2021	contributed talk	AbGradCon 2021 – Astrobiology Graduate Conference	virtual event
2021	invited talk	Journal Club - The Royal Observatory, Edinburgh	Edinburgh, UK*
2021	contributed talk	NASA 2021 Sagan Exoplanet Summer Virtual Workshop	Pasadena, US*
2021	contributed talk	ISM 2021 – Structure, characteristic scales, and star formation	Beirut, Lebanon*
2021	contributed talk	XVI Congresso Nazionale di Scienze Planetarie	Padova, Italy

* held virtually

TRAINING AND CAREER DEVELOPMENT

2021	workshop	ENGAGE 2021 – Comunicazione e divulgazione della scienza	Venice, Italy
2021	program	The Physics of the Emergence of Life	Garching, Germany
2021	PhD School	RED'21 School – Astrobiology Introductory Course	Le Teich, France*
2021	PhD School	10th VLTI School of Interferometry	Sophia-Antipolis, France*
2021	PhD School	Summer School in Statistics for Astronomers XVI	State College, USA*
2021	symposium	IX ELSI International Symposium - Science in Society	Tokyo, Japan*
2020	course	Python Course 2020	Padova, Italy*
2020	workshop	ENGAGE 2020 – Comunicazione e divulgazione della scienza	Pisa, Italy*

* held virtually

OUTREACH

2021	panelist	Notte europea dei ricercatori 2021	Padova, Italy
2021	contributed video	Percorsi Galileiani – PhD edition	Padova, Italy

PUBLICATION RECORD

2022 Ray, S., Hinkley, S., Sallum, S., et al., including Squicciarini V., *Detecting planetary mass companions near the water frost-line using JWST interferometry*, under review on MNRAS

2022 Squicciarini, V., Gratton, R., Janson, M., et al., *A scaled-up planetary system around a supernova progenitor*, arXiv:2205.02279

2022 Bonavita, M., Fontanive, C., Gratton, R., et al., including Squicciarini V., *Results from The COPAINS Pilot Survey: four new brown dwarfs and a high companion detection rate for accelerating stars*, arXiv:2205.02213

2021 Mesa D., Ginski C., Gratton R., et al, including Squicciarini V., *Signs of late infall and possible planet formation around DR Tau using VLT/SPHERE and LBTI/LMIRCam*, arXiv:2111.01702

2021 Janson M., Gratton R., Rodet L., et al, including Squicciarini V., *A wide-orbit giant planet in the high-mass b Centauri binary system*, Nature, 600, 231

2021 Squicciarini V., Gratton R., Bonavita M., et al., *Unveiling the star formation history of the Upper Scorpius association through its kinematics,* MNRAS,507,1381

2021 Mesa D., Marino S., Bonavita M., et al., including Squicciarini V., *Limits on the presence of planets in systems with debris discs: HD 92945 and HD 107146,* MNRAS,503,1276

2021 Bonavita M., Gratton R., Desidera S., et al., including Squicciarini V., *New binaries from the SHINE survey,* arXiv,arXiv:2103.13706

2021 Janson M., Squicciarini V., Delorme P., et al., *BEAST begins: sample characteristics and survey performance of the B-star Exoplanet Abundance Study*, A&A,646,A164

2021 Squicciarini V., Claudi R., La Rocca N., *Searching for the oxygen footprint of light-harvesting organisms*, doi: 10.5194/epsc2021-763

2021 Claudi R., Alei E., Battistuzzi M., et al., including Squicciarini V., *Super-Earths, M Dwarfs, and Photosynthetic Organisms: Habitability in the Lab*, Life,11,10

2021 Carleo I., Desidera S., Nardiello D., et al., including Squicciarini V.,, *The GAPS Programme at TNG. XXVIII. A pair of hot-Neptunes orbiting the young star TOI-942,* A&A,645,A71